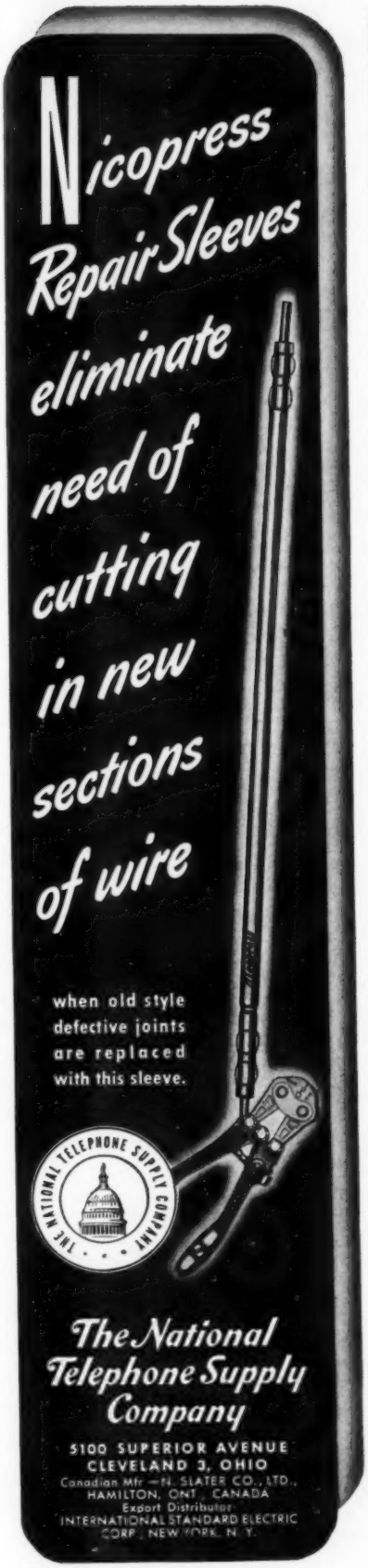
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TELEPHONY

The Journal of the Telephone Industry

OCTOBER 21, 1944

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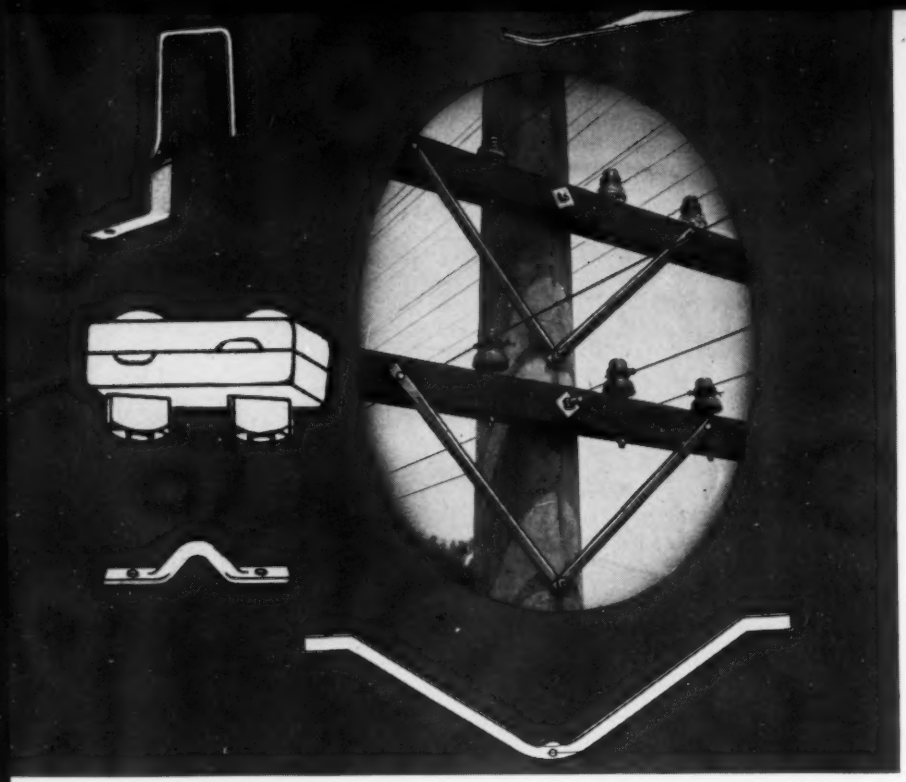

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LINE UP WITH *Kellogg* FOR LINE SUPPLIES

INDEPENDENTS ENJOY FINE

Program at USITA Meeting

By R. C. RENO

Agenda at group conferences and general sessions included subjects of vital interest to companies of all sizes. . . . SMALL COMPANY-RURAL TELEPHONE SITUATION topic of lively discussion by speakers and in corridors and rooms. . . . Boylan elected president.

THE FOURTEEN hundred representatives of Independent telephone companies who attended the 48th annual meeting of the United States Independent Telephone Association October 10, 11 and 12 at the Hotel Stevens, Chicago, enjoyed one of the best arranged and most helpful programs ever presented by the national Independent association.

The officers of the association, particularly Clyde S. Bailey, executive vice president, deserve and should have the plaudits of the entire industry for their efforts in designing a program that would be of universal interest — to small companies as well as to large companies. With the return of the three-day convention, it was possible to resume group conferences which are always popular with telephone men because more practical discussion can be carried on in these conferences than in large, general sessions.

Mr. Bailey and the other officers of the association should be especially commended for arranging for the discussion of many problems of small Independent companies and the rural telephone situation which are, in fact, synonomous. Practically every speaker in the group conferences and in the general sessions referred to or discussed the *small company-rural telephone situation,* recommending that the industry take steps to bring about an improvement in the situation. This extended discussion on the subject by speakers and by hundreds who discussed it in the hotel corridors and rooms is indicative that progressive members of the industry do recognize that there is a small company problem, which should receive the sincere and active interest from the industry as a whole.

There was only one disturbing element at this year's convention, as far as the writer could see, and that was the lack of interest on the part of the Stevens Hotel in adequately caring for the needs of those attending the convention. Many who had reservations did not get rooms, and the independent attitude of some of the hotel people did not serve to calm the ruffled dispositions of many who were without hotel facilities.

It is recognized that hotels, especially those in larger cities, are having a difficult time meeting the heavy demands for their facilities at the present time. However, in our opinion, it is good business for hotels not to make commitments or reservations which they, themselves, are almost certain they cannot fill. However, it is worse when they display an arbitrary attitude when they cannot fill ther commitments. Not only were individuals unsatisfactorily served at last week's convention, but it is understood that facilities and services for group conferences and main sessions were far from adequate, even though plans for the convention were made early this year.

Inasmuch as the USITA conventions have been held in the Stevens Hotel, almost since its establishment, with the exception of the last two years when it was not operating as a commercial hotel, it would seem that the association is entitled to more consid-

In accordance with its policy of the past few years, and in response to many requests made at last week's USITA convention, TELEPHONY again is publishing in full the addresses and committee reports, with the three exceptions noted on page 20, given at the meeting.

As in past years, publication of addresses and reports makes it necessary to devote more space than otherwise would be the case. However, TELEPHONY considers it a responsibility to extend this service to the industry so that all of those who did not have the privilege of hearing the reports and addresses can read them so there will be wider use of the material in executing the industry's war program and also in making its postwar plans.

J. P. BOYLAN
President

CLYDE S. BAILEY
Executive Vice President

COL. W. C. HENRY
First Vice President

R. A. LUMPKIN
Second Vice President

CARL D. BROREIN
Treasurer

eration than it received this year. It was the opinion of many of those attending the conventions, with whom the writer talked, that if this year's treatment is indicative of what can be expected in the future, the association would do well to consider other hotels, of which there are several of sufficient size to handle its meetings, for its postwar conventions.

It was the suggestion of some that, next year, it would be well to appoint a hotel arrangements committee several months in advance of the convention and have that committee investigate hotel conditions to make recommendations to the association concerning the hotel that can, and will, adequately serve the convention.

Following the recommendation of the board of directors, the convention voted the following changes in the association's by-laws pertaining to membership classifications:

ARTICLE IV—Strike out Sections 3, 4, 5, 6 and 7 and insert the following:

Section 3. Active Members. Active members of the association shall be divided into five groups.

Group A—Telephone companies operating in the United States (including its territories and possessions) or in Canada.

Group B—Manufacturing companies or sales organizations, a substantial part of whose business is the manufacture or sale of Independent telephone equipment and supplies to or for the account of Independent telephone companies located in the United States (including its territories and possessions) or in Canada.

Group C—Publishers of telephone trade magazines or telephone directories and engineering, advertising, accounting, or managerial organizations, a substantial part of whose business is with Independent telephone companies.

Group D—Companies owning and/or controlling companies eligible as active members of this association, when all such owned or controlled companies eligible to membership are active members of this association; provided further that such ownership and/or control is the principal business of such owning and/or controlling company.

New USITA Officers

President—J. P. BOYLAN, Rochester, N. Y.

Executive Vice President—CLYDE S. BAILEY, Washington, D. C.

First Vice President—COL. W. C. HENRY, Bellevue, Ohio.

Second Vice President — R. A. LUMPKIN, Mattoon, Ill.

Treasurer—CARL D. BROREIN, Tampa, Fla.

Secretary and Assistant Treasurer —F. D. RIDINGS, Washington, D. C.

Group E—Telephone companies operating in the United States (including its territories and possessions) with annual gross operating revenues not exceeding $50,000.00 so long as the membership of such a telephone company in a state telephone association is duly certified to the secretary of this association by an authorized executive officer of such state telephone association to be in good standing. Membership shall be accredited to such company by notification of this association and such accredited member may, but shall not be required to, pay dues to this association.

Each active member shall be entitled to one vote in any meeting of the membership.

Section 4. Associate Members. Associate members of this association shall be divided into two groups.

Group a—Manufacturing companies or sales organizations, the volume of whose business in the manufacture or sale of Independent telephone equipment and supplies to or for the account of Independent telephone com-

New Directors Elected

J. H. AGEE, Lincoln, Neb.
E. M. BLAKESLEE, Lafayette, Ind.
B. L. FISHER, Martinsville, Va.
T. S. GARY, Chicago, Ill.
A. N. JOHNS, San Francisco, Calif.
R. A. LUMPKIN, Mattoon, Ill.
F. R. McBERTY, Galion, Ohio.
KELLEY McNISH, Bristol, Tenn.
R. A. PHILLIPS, Sioux Falls, S. D.
J. R. PORTER, Tarboro, N. C.
E. W. RODORMER, Chicago, Ill.
R. B. STILL, Bloomington, Ill.
R. E. WILLIAMS, Fort Wayne, Ind.
JOHN H. WRIGHT, Jamestown, N. Y.

panies is insufficient to qualify them as active members.

Group b — Publishers of telephone trade magazines or telephone directories and engineering, advertising, and accounting, and managerial organizations, the volume of whose business with Independent telephone companies is insufficient to qualify them as active members of this association.

Associate members shall not be entitled to vote in any meeting of the membership.

Section 5. Honorary Members. An individual may, upon recommendation of the board of directors, be elected an honorary member of this association by the vote of a majority of the members represented at any annual meeting of the membership, and such honorary members shall be entitled, without the payment of dues, to all the privileges of this association except the right to vote and hold office.

Section 6. Approval and discontinuance of Memberships. No application for membership in this association shall be effective until approved by either the board of directors or in the interim between meetings of the board of directors, by the executive committee of the board, and likewise, the board or committee may terminate memberships for any of the following reasons: (a) Retirement from the industry; (b) change in ownership so as to be no longer eligible; (c) failure to pay dues and/or assessments; (d) or for any other valid reason.

Section 7. Eligibility of an Individual. Any individual wholly owning, operating or managing any company or organization eligible to active or associated membership of this association shall likewise be eligible for such membership in his own name.

ARTICLE VIII, SECTION 2; strike out "and associate" from the last line in the printed copy of the by-laws.

ARTICLE VIII, SECTION 4; strike out "and associate member" from the second line, also "and/or associate" from the tenth line of the printed copy of the by-laws.

Substitute the following for ARTICLE IX:

DUES

The annual dues of each of the classes of members and the groups therein shall be fixed from time to time by the board of directors; such dues shall be payable in advance in January of each year.

Following the adoption of the by-laws by the convention, the board of directors adopted the following dues for the various member classifications:

ANNUAL DUES

Active Members	
Group A	$ 5.00
Group B	50.00
Group C	25.00
Group D	125.00
Group E	No requirement
Associate Members	
Group a	$ 25.00
Group b	10.00

The association was reported to be in a healthy financial condition by Secretary-Treasurer C. C. Deering. The 1943 expenses exceeded its income, due in part to the expense of moving the headquarter office from Chicago to Washington, and in part to the heavy load of work that the association carried on in 1943. Mr. Deering reported that it is expected this year's income will exceed expenses by a substantial margin.

The following were re-elected directors of the association: J. H. Agee, Lincoln, Neb.; E. M. Blakeslee, Lafayette, Ind.; B. L. Fisher, Martinsville, Va.; A. N. Johns, San Francisco, Calif.; R. A. Lumpkin, Mattoon, Ill.; F. R. McBerty, Galion, Ohio; R. A. Phillips, Sioux Falls, S. D.; J. R. Porter, Tarboro, N. C., and R. E. Williams, Fort Wayne, Ind.

The following were also elected directors: R. B. Still, Bloomington, Ill.; T. S. Gary, Chicago; E. W. Rodormer, Chicago; Kelley McNish, Bristol, Tenn., and John H. Wright, Jamestown, N. Y.

CAMERAMAN BLAIN ON JOB AGAIN

Through the cooperation of Ray Blain, TELEPHONY's technical editor, it is possible to present an extensive pictorial record of last week's USITA convention. At conventions where there are no manufacturers' exhibits where telephone people usually congregate, it is exceedingly difficult to secure group "shots." However, we think you will agree that Mr. Blain has done an unusually superb job.

Instead of grouping the photographs on a few pages, as in past years, they are scattered throughout the pages of this issue.

Executive Committee

J. P. BOYLAN, Rochester, N. Y., Chairman.
F. E. BOHN, Fort Wayne, Ind.
H. V. BOZELL, New York, N. Y.
CARL D. BROREIN, Tampa, Fla.
T. S. GARY, Chicago, Ill.
ALDEN L. HART, Abilene, Kan.
R. A. LUMPKIN, Mattoon, Ill.
F. R. McBERTY, Galion, Ohio.
C. D. MANNING, Chicago, Ill.
C. F. MASON, Santa Monica, Calif.
R. A. PHILLIPS, Sioux Falls, S. D.

Officers elected are as follows: President, John P. Boylan, Rochester, N. Y.; first vice president, Col. W. C. Henry, Bellevue, Ohio; second vice president, R. A. Lumpkin, Mattoon, Ill.; executive vice president, Clyde S. Bailey, Washington, D. C.; treasurer, Carl D. Brorein, Tampa, Fla., and secretary and assistant treasurer, F. D. Ridings, Washington, D. C.

Following are members of the Executive Committee: Chairman, Mr. Boylan; F. E. Bohn, Fort Wayne, Ind.; H. V. Bozell, New York, N. Y.; Mr. Brorein; T. S. Gary, Chicago; Alden L. Hart, Abilene, Kan.; Mr. Lumpkin; Mr. McBerty; C. D. Manning, Chicago; C. F. Mason, Santa Monica, Calif., and Mr. Phillips.

The association paid high tribute to Chas. C. Deering, who retired as secretary-treasurer of the association after serving it in that capacity for the past 24 years. Probably no Independent telephone man is better known than Mr. Deering, nor has done more for the national association in its history. Mr. Deering informed the directors at the spring executives' conference that he would not be a candidate to succeed himself. The entire industry appreciates the loyalty and the interest that Mr. Deering has taken in the welfare of the Independent industry during his many years of service. The association, through its board of directors, presented Mr. Deering with a gift in recognition of his long service.

Tribute also was paid to E. C. Blomeyer, Chicago, by many of his friends, including the directors of the association, upon his resignation from the association board, after serving as a director for the past 19 consecutive years. In recognition of his long service to the association, and of the 40th wedding anniversary of Mr. and Mrs. Blomeyer which fell on the last day of the convention, their friends presented them with a beautiful mantel clock.

The Independent Pioneer Telephone Association held its annual meeting on

(Left to Right): L. H. PEEBLES, Washington, D. C., director, WPB Communications Division; FRANCIS X. WELCH, TELEPHONY's Washington editor; KEITH S. McHUGH, New York City, AT&T vice president; WALTER S. GIFFORD, AT&T president; C. F. MASON, Santa Monica, Calif., USITA past president, and HUNTER L. GARY, chairman, Associated Telephone & Telegraph Co.

Newly-elected officers of the Independent Pioneer Telephone Association got together for a short session during the convention. They are, left to right, vice president, R. W. SIEMUND, Chicago, president, Leich Sales Corp.; secretary-treasurer, J. K. JOHNSTON, Indianapolis; president, G. B. FOSCUE, and vice president, R. C. RENO, TELEPHONY's editor.

TELEPHONY's popular associate editors. (Left to Right): RAY BLAIN, Philadelphia, Pa., technical editor; MAYME WORKMAN, Springfield, Ill., traffic editor; and FRANCIS X. WELCH, Washington (D.C.) editor.

October 10, with President G. B. Foscue presiding. A report of this meeting will be published in full in a near-future issue of TELEPHONY.

The USITA's Coordinating Committee sponsored a luncheon meeting of state association executives on October 10, at which many subjects concerning association work was discussed, among which was the small company-rural telephone situation. The meeting was opened by Mr. Foscue, chairman of the Coordinating Committee, who turned the meeting over to USITA Executive Vice President Bailey.

The principal address of the convention was given by Walter S. Gifford, president of the American Telephone & Telegraph Co., and his talk will be published in full in a future issue of TELEPHONY.

WALTER S. GIFFORD, AT&T president, addressing the convention.

In accordance with its past policy, TELEPHONY is not publishing a long, running story of the USITA meeting in this issue, but instead is publishing almost all the reports and addresses of the convention. The only items not published are the addresses in connection with "Unattended Dial Installations," given during the Commercial Conference under the leadership of H. F. McCulla, Lincoln, Neb.; Mr. Gifford's address, and a report on the Traffic Conference. These items will be published in subsequent issues.

It is suggested that readers refer to the convention program, published on page 19 of the October 7 issue, in reading the reports and addresses presented on the following pages.

USITA president, C. F. MASON, delivering annual address.

LIGHTNING PROTECTION

By E. W. OLSCHNER

Vice President
Carolina Telephone & Telegraph Co.

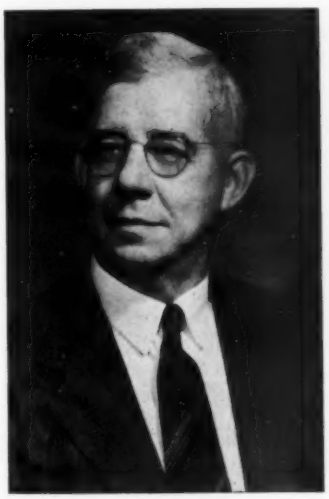
THIS PAPER is prepared in two phases. The first phase covers the general characteristics of lightning and discusses the various protective devices commonly used on telephone plant and the function performed by each item of this protective equipment. The second phase is more technical and discusses, in greater detail, just what happens in the cable plant when lightning strikes. It also discusses some additional measures which have been tried in a limited number of cases to be used in certain areas where excessive damage is being experienced.

In discussing this problem, it seems desirable first to review briefly the operation of a thundercloud, its formation and characteristics, and as best we know, just what happens when a lightning discharge takes place.

Lightning—the ordinary lightning of a summer day—is an electronic phenomenon. The lightning flash occurs, of course, because cloud and earth have built up electrical charges, have arrived at what is, in effect, an abnormal condition which corrects itself in a violent and sudden manner.

In terms of electrons, a body is charged when it has either more electrons or less than the number normally corresponding to the atoms which compose it. In the normal atom, the negative charge of electrons is equaled and neutralized by the positive electricity of the central nucleus. By various means, for example, frictionally close contact, this equality may be undone; then electrical forces are called into play, like electricities repelling while unlike attract. Always, any excess of electrons in a body tends to pass to one with a deficiency. The greater the excess or deficiency, the stronger the urge to balance the account.

That is the situation of earth and cloud before the lightning strikes. The discharge is an action of electrons, a readjustment in the location of electrons which is as natural as that of molecules of water flowing down a hill. Once the water gets to the top of a hill, its tendency is to immediately run down to sea level, where no further fall is possible. In the course of its descent, it converts its potential energy, that is, the energy inherent in its elevation, into kinetic energy and dissipates that energy of motion in overcoming obstacles en route or in striking a blow at the end of its path as does the falling water which hits the turbine blades in a hydro-electric plant. The readjustment must frequently await suitable conditions, just as water held behind a dam seeks its level only when the gates are opened or the dam breaks. While it waits, its ability to work remains potential.



E. W. OLSCHNER

When cloud and earth are oppositely charged, they constitute a system of potential energy, ready for conversion into kinetic energy in the form of moving electrons. Between is an atmosphere of air — and also, wandering freely and along through the relatively vast spaces between air and molecules, a few electrons. Of the air molecules, almost all are normal, that is, uncharged. Some by the collection of wandering electrons may have become negative; others by loss may become positively charged. In either case they should be called "ions," meaning "goers," for they are subject to electrical influence and will go toward charged bodies.

The free electrons move toward earth or cloud, whichever is positively charged. Their progress is necessarily impeded for they must dodge or jostle their way past the enormously more numerous neutral molecules which pursue only haphazard motions, uninfluenced by cloud and earth.

This is the situation under which lightning occurs. As the charges on earth and cloud grow greater, or as the cloud swings nearer towards the earth, the acceleration of electrons is increased. A damaging collision may then occur in which an electron is knocked off from a neutral atom. The wrecked atom is thereby divided into a free electron and a positively charged atom. The latter does not limp away from the scene of the accident. It has become an "ion" by virtue of its unbalanced electrical condition. Subject now to electrical forces, it starts off in the opposite direction from that taken by the free electrons, while the electron just freed joins the electronic parade.

Traffic now becomes dangerous. With each collision other electrons and atoms are created. Their number grows with enormous rapidity. The normal condition of the atmosphere breaks down and, in almost no time, an enormous stream of electrons is set into motion. In other words, between cloud and earth there is a strong current of electricity. Along the path of this discharge, the molecules are stirred by the plunging electrons into more violent haphazard motions. Their sudden increase in kinetic energy means a higher temperature and a rapid expansion of the local air. Through adjacent atmosphere, therefore, spreads a pulse of compression, a crowding of molecule upon molecule, which is perceived as thunder by the ear.

During the sequence of acceleration, collision and ionization there is a net transfer of electrons from the negative body to the positive, and for both, a neutralization of the charged condition. During this process, which is rapid and violent, the potential energy of the electrical system of cloud and earth is dissipated in heat, and to smaller extents in light and sound. Then ionization ceases, but recombination—that is, de-ionization—continues for a moment more, until finally the rent atmosphere returns to a normal condition.

Most thunder does not reach the ear as a single crack because sound travels at a speed of only 1,100 ft. per second. For instance, one portion of a lightning discharge in the clouds may be three seconds away, while another portion of the stroke may be only one second away. Thus, the sound reaches the ear as a continuous rumble.

Probably the oldest protective device from lightning known to man is the lightning rod. It was invented and placed in service long before electric current was generated and transmitted for human use. For over a century, lightning has been by-passed to ground by this means. Today these rods are a very serious business. When properly installed, they afford a high degree of protection and often save many times their cost in fire prevention alone. This is especially true in the open country, where lightning is more likely to strike buildings than in a city, because the exposure in the country is considerably greater.

Nearly 2,000 people are killed or injured by lightning in the United States each year. Nine-tenths of these casualties occur in rural areas. However, not all lightning rods are installed in rural districts. Some are used in cities to protect fine trees or skyscrapers.

One fine example is the General Electric building in New York, which is more than 500 ft. high. When this building was new, it was struck and damaged several times. Investigation revealed that steel work had not been carried to the upper extremity of the tower and the top 50 feet of the building was brick with non-grounded reinforcing members. This problem was solved with a lightning rod system that conducts strokes harmlessly to ground through the network of steel in the building.

It is estimated that the damage to aerial telephone plant in the United States from lightning alone amounts to about three-quarters of a million dollars annually. In addition, of course, damage is caused by direct contact with power wires, power arc follow-up, etc. To protect the plant as best we can against these causes is the reason the various protective devices are used.

(Left to Right): HARRY C. HANSEN, American Steel & Wire Co.; D. C. GIBSON, Chicago, Leich Sales Corp., and L. R. ZEARFOSS, Toledo, Iowa.

No doubt most of you are familiar, at least in a general way, with the various protective devices installed on telephone circuits. However, some of you may not be familiar with the functions of these devices.

The three usual means of providing protection are the voltage discharge gap, commonly called "protector blocks," the fuse and the heat coil. The protector blocks protect the plant against excessive voltages, and the fuse and heat coil protect the plant against excessive currents.

Visualize, if you please, a complete subscriber's circuit beginning in the central office, through underground cable, through aerial cable, through open wire and finally through drop wire to the subscribers station equipment. In the central office each wire is equipped with a voltage discharge gap and a heat coil, the heat coil being connected in the circuit on the office side of the discharge gap. At the junction of underground and aerial cable, seven ampere fuses are placed in each wire unless equivalent protection is provided by fine gauge cable (24-gauge or smaller). At the junction of the aerial cable and open wire, a voltage discharge gap is placed on each wire if the open wire is a half mile or more in length. If the open wire is less than a half mile in length, no voltage protection is usually provided at this point.

At the subscriber's station we have a fuse and a discharge gap, the fuse being on the *line* side of the carbon blocks.

The voltage discharge gap is an arrangement which, when connected to a telephone wire, provides a small air gap between the wire and ground. One of the blocks is of carbon and forms the ground electrode. The other is of porcelain with a small carbon insert. The carbon insert forms the line electrode and is so arranged that, when the two blocks are held together by a spring in the usual manner, a small air gap exists between the carbon block and the carbon insert. The carbon insert is held in place in the porcelain block by means of glass cement.

A ground on the telephone conductor is established when the voltage between the electrodes is sufficiently high to cause arcing across the gap. In some cases of severe discharge, enough carbon may be pulled from the blocks to span the gap and cause permanent grounding. Then, too, when the discharge is prolonged, and the energy dissipated in the spark gap is high enough, the glass cement will soften and allow the carbon insert to be pushed against the carbon block by the supporting spring, thereby solidly grounding the telephone conductor.

At the central office and in the subscriber's station, the discharge gap is the so-called 350-volt protector. The air gap in these protectors is about three one-thousandths of an inch. On the average, this protector will operate at 350 volts peak and practically all will break down at voltages of 550.

(Left to Right): R. C. RENO, TELEPHONY's editor; MRS. R. B. STILL and MR. STILL, Bloomington, Ill.; V. E. CHANEY, Fort Wayne, Ind.; MAJ. H. E. BILLINGTON, Dayton, Ohio, and A. J. PARSONS, Springfield, Ill.

At the junction of the aerial cable and open wire, the discharge gap is the so-called 700-volt protector. The air gap, in this case, is about six one-thousandths of an inch. On the average this protector will operate at 700 volts peak and practically all will break down at 1,050 volts.

There are two kinds of protective devices commonly used to protect the plant against excessive currents: The fuse, or small gauge cable, and the heat coil.

When the open space cutout breaks down under abnormal potential, a current will exist in the telephone conductor. It is the function of the fuse to interrupt this current before overheating or damage occurs to the telephone plant. The fuse normally used for this purpose will carry seven amperes continuously and will operate in less than five minutes on a current of 10.5 amperes. It should be remembered *always* that the fuse is inserted in the circuit between the open space cutout and that part of the plant on which high voltages may be impressed. In this case, after the operation of the fuse, the open space cutout, together with the station or central office equipment associated with the circuit, are isolated from the source of high voltage.

No doubt many of you have sometimes noticed station protectors with fuses strapped out or not placed in the circuit on the *line* side of the voltage gap, and it can be readily seen that this practice presents a very hazardous situation on the subscribers' premises, especially with respect to fire.

It might be interesting to know why seven amperes were selected as being the most suitable rating of the fuses used. For safety reasons the rating must be low enough so that fuse operation will take place before overheating of protector mountings or equipment can occur. On the other hand, it should be high enough so that the fuse will not operate on current values employed in constant current series street lighting circuits. It is characteristic of these lighting circuits that, when they are opened, a very high voltage tends to build up across the gap. If such a circuit comes in contact with a telephone conductor and is closed through the open space cutout and fuse, operation of the fuse might increase the voltage to such an extent that the fuse would arc over and thereby cause a fire. The usual current employed in series street lighting circuits is 6.6 amperes.

Where foreign voltages not high enough to cause protector operation are impressed on telephone circuits, the terminal equipment may provide the only path to ground for the current. These currents are called "sneak currents" and although they are usually of small magnitude, in certain cases they may, if allowed to continue, overheat the equipment and associated wiring, and constitute a fire hazard. It is the purpose of the heat coil to divert these currents to ground before overheating occurs. The heat coil, in general use, will carry .35 ampere of current for three hours and will operate in about three minutes on .54 ampere. It consists essentially of a coil of fine wire around a tube in which a pin is soldered. When this coil is in the mounting, the coil of wire is in series with the telephone conductor. When the current in the coil heats the copper tube sufficiently to soften the solder, the pin, which is connected on the line side of the coil wire, is grounded by the spring in the mounting, thus solidly grounding the telephone conductor.

Heat coils are not generally installed on toll circuits since, in general, the current that may exist in toll circuit equipment, due to a voltage not high enough to operate the protector blocks, is limited in magnitude by circuit impedances and by fuses in battery supply circuits to toll equipment.

G. L. BEST, New York City, AT&T assistant vice president (left) and CLYDE S. BAILEY, USITA executive vice president, trade stories during last week's convention.

R A. PHILLIPS, Sioux Falls, S. D., (left) and L. W. HILL, Tarboro, N.C., discussing the Telephone Advertising Institute's advertising program during convention.

C. F. MASON, USITA past president (left), and the newly-elected president of the association, JOHN P. BOYLAN, Rochester, N. Y. at the speakers' table.

The discussion of the second phase is based on a theoretical study of the various problems involved in lightning protection of aerial cable. It will be evident that there are many factors which affect the probability of damage to aerial cable. This is complicated further by the varying degree to which each of these factors comes into play, so that it is not possible to present very definite information on trouble expectancy.

The peak current in a lightning stroke as measured in numerous instances varies from zero to about 175,000 amperes with 50 per cent of the strokes exceeding 25,000 amperes, and about 20 per cent of the strokes exceeding 50,000 amperes. Thus, if a cable could withstand 25,000 amperes and remedial measures were applied so that it could withstand 50,000 amperes, the number of failures would be reduced about 2.5 times.

Current measurements have indicated that the current usually reaches its crest value in about five to 10 microseconds and that it decays to about half its crest value in from 25 to 100 microseconds.

At a point remote from ground in an aerial cable, the impedance to ground is about 200 ohms (400 in each direction). Since about 95 per cent of all strokes have current in excess of 5,000 amperes, it can be seen that the voltage between sheath and ground is above 1,000,000 volts in 95 per cent of the cases. The conductors within the cable are raised to approximately the same potential above ground as the sheath due to capacitive and inductive coupling between the sheath and conductors. There is, however, some difference in potential between sheath and core, due to the resistance drop along the cable sheath, and it is this voltage that we are mainly concerned with

as far as damage to the cable is concerned.

The voltage between sheath and core is largest at the stroke point and diminishes as the distance from the stroke is increased. The smaller the cable, the higher the sheath resistance, and therefore, the greater will be the voltage difference between sheath and core conductors, which accounts for the more frequent damage of small cables. Normal exchange cables are designed to withstand surge voltages from about 1,200 to about 1,500 volts.

When the voltage near the stroke point exceeds the dialectric strength of the cable, puncturing will occur. When this occurs, one or more of the core conductors will then be in contact with the sheath near the stroke point. The voltage, between these conductors in contact with the sheath, and the sheath will then increase with distance along the sheath, the voltage at a given point being approximately equal to the resistance drop along the cable from the point of contact to the point under consideration. A maximum voltage, which is only slightly smaller than the voltage at the stroke point before breakdown, is reached some distance from the stroke point, and the voltage then slowly decreases beyond this point. This reasoning accounts for the fact that other punctures will ordinarily occur some distance away in either or both directions.

A voltage between the core and sheath, sufficient to break down a cable, may be developed either by (1) a large sheath current for a relatively short distance; (2) smaller current over a longer distance, or (3) a combination of (1) and (2), depending on ground paths from the sheath and their locations with respect to the sheath. The effect on the cable is quite different for cases (1) and (2). Where the current is large, and the distance short, permanent trouble will generally result because of a large transfer of current through the fault. On the other hand, where the sheath current is relatively small, and the distance long, permanent damage is unlikely, even though the voltage may be the same.

As mentioned before, the voltage to ground on an aerial cable during a stroke will, in most cases, exceed 1,000,000 volts which will give rise to arcing for a distance of at least three feet. Therefore, even if guys are not bonded to the sheath, current discharge will occur between the sheath and guys for a considerable distance away.

For grounds of large dimensions, the resistance is fairly independent of current. However, this is not the case for grounds consisting of one or a few ground rods or guy anchors. The resistance of such grounds *decreases* as the current increases due to the lowering of the soil resistivity, caused by ionization around the rods which means that grounds on the cable near the stroke are more effective in taking away lightning currents than is indicated by DC measurements.

(Left to Right): T. S. GARY, Chicago, Automatic Electric Sales Co.; MAJ. J. C. GRABLE of the Signal Corps, and HUNTER L. GARY, Associated Telephone & Telegraph Co.

Sheath grounds of large dimensions, such as underground dips, have a substantially lower resistance than guy anchors and ground rods. Because of this lower resistance, these good grounds will materially reduce the likelihood of lightning damage within a few hundred feet. However, when the stroke occurs some distance away and there is no intermediate low resistance ground, these dips may reduce the voltage between sheath and ground to such an extent as to prevent arcing from sheath to ground across the pole near the stroke. It will then have an adverse effect, because all of the current will flow along the sheath to the low resistance ground and give rise to a high voltage between core and sheath. Since this voltage is developed over a fairly short distance, permanent failure is likely to occur if the breakdown voltage of the core insulation is exceeded.

Remedial measures, such as pole protection wires and aerial or buried shield wires, may be applied in existing situations where severe lightning is experienced. Of the measures that may be applied externally, pole protection wires appear at this time to offer the best protection for a given expenditure. This practice has not been used as yet in my company, but plans are under way to have it installed in certain localities where extensive damage is being experienced.

Pole protection wires have been used in the past to protect poles against splintering. However, recent experience has indicated these wires, which consist of a wire bonded to the cable and extending from the top to the bottom of the pole or to a point near the ground line, may also provide protection to aerial cables. The operation of this mechanism is quite complex. Numerous tests have been made by the Bell System along these lines and it was found, where pole protection wires are installed, that the voltage between core and sheath becomes smaller as the number of grounds is increased up to about 10 or 15, depending on the earth resistivity. Beyond this point the voltage between core and sheath is increased as the number of grounds is increased. This may be explained as follows:

A low resistance ground placed on the sheath at a point where lightning strikes will reduce considerably the current along the sheath to a remote ground, thereby reducing the voltage from core to sheath. If a sufficient number of grounds were to be placed on the sheath at the point of stroke, the voltage theoretically could be reduced to any desired value. This large number of grounds may be obtained by increasing the number of pole protection wires. These grounds will, however, be spread along the cable so that considerable current will be carried by the sheath to reach them. This current will give rise to a voltage between sheath and core due to the resistance drop between the point of stroke and point of auxiliary ground, and as the number of grounds is further increased, this voltage will finally exceed the voltage reduction due to increasing the number of grounds and, therefore, the voltage from sheath to core will increase as additional pole protection wires are added.

However, by the use of a gap of the proper length in the pole protection wires, the number of conducting grounds may be limited to an optimum value since a given voltage will arc over a limited number of gaps. For instance, in an area where the ground resistivity is 100 meter-ohms, the stroke current is 100,000 amperes, and a 12-inch gap is used, arcing across the gap would be expected to occur at five

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RADIO CHANNELS IN TELEPHONE FIELD

By B. C. BURDEN
Technical Consultant
Lincoln, Neb.

AS MANY OF you know, your national association has, during the past few months, been giving attention to the use of radio channels in the telephone field. In association with the Bell System, and in conjunction with the work of the Radio Technical Planning Board, studies have been made of the various common carrier uses of radio channels in our business.

Those of us who have been engaged in these studies are convinced that radio can play an important role in the telephone field. We do not conceive of it as a replacing, but rather a supplementary medium whose use will be in the public interest.

We are on the threshold of an era in which communications will play a leading part. The war has given the art of communications a new mobility and breadth of use. If the reputation which our country holds for having the finest communications system in the world is to be maintained, then I feel certain that we must embrace radio as an adjunct to the wire and cable circuits on which our telephone system has been built.

If the goal of the telephone industry is to be a "truly universal communication system" which will enable telephone conversation to be carried on between any two points, regardless of whether or not they involve trains, planes, or even the family automobile, then we must utilize radio. If, on the other hand, we say to ourselves, "let's not complicate our business with radio, let's not extend our activities beyond the medium of wire and cable," then we admit that we must stop far short of our goal of a universal communication system.

The business executive in an airliner, the cattle raiser on a train on his way to the city market, or the long distance trucker speeding to his terminal on an express highway, all lose contact with their homes and office when they are in motion. We provide them with the world's finest communication system up to the very gate of the air terminal, or the railroad station, or the loading dock of the warehouse, and then we waive all further responsibility for communications until they reach their destinations. Truly here is a missing link in our communication system.

There is still another group of people and even some small communities that are deprived of the advantages and security of telephone service because they are located at substantial distances from existing wire lines.

It is true that in most cases it would be physically possible to build telephone lines to serve isolated families of communities, but the costs involved would be so high as to make such construction impractical. It might be argued that it is the obligation of the telephone company to build lines, regardless of costs, to serve those living at considerable distances from existing lines. It would be just as reasonable to expect the state or federal governments to pave or rock every minor road in the country, or a bus company to provide service to the most remote part of the country.

B. C. BURDEN

If needed telephone service is to be rendered to these remotely located families and communities, it looks like radio may be a practical medium to use.

Radio Channel Applications

In the studies which have been carried on by our group and the Bell System preparatory to making recommendations to the Radio Technical Planning Board, six primary applications of radio channels in the telephone field (of interest to Independent companies) were recognized, viz:

(1) Common carrier emergency service.

(2) Common carrier urban mobile service.

(3) Common carrier highway mobile service.

(4) Special situation short haul toll trunks.

(5) Special situation rural telephone service.

(6) Long haul toll trunks (involving intermediate repeater stations).

Common carrier emergency service contemplates the use of radio channels during an emergency period when regular wire service may be damaged. It could also be used in special situations where, even though no damage has been incurred by the telephone plant, a public emergency existed of such nature as to require that wire toll circuits to surrounding towns be augmented by emergency radio channels.

Emergency situations in which radio might prove useful might result from fire, flood, blizzard, wind, or explosions of such magnitude as to completely disrupt the normal communications of a community. Emergency radio channels could, in the public interest, be used in any one of the following ways, viz:

(1) To provide temporary toll circuits to the outside world in situations where wire service has been damaged.

(2) To provide needed extra communication facilities to other communities during the emergency period or to furnish a talking link between the scene of some emergency or disaster and the telephone office.

(3) To provide a means of communication between the telephone office and line repair crews engaged in restoring wire service during some unusual storm or emergency condition.

The merit and value of radio channels for emergency service has already been recognized by the Federal Communications Commission by the granting of licenses to telephone companies for the operation of such equipment. There are at present over 100 portable emergency radio units licensed for use by telephone companies in the United States. The FCC has assigned 2726 kc. as the operating frequency for these units. The recommendations which have been made by the telephone group to the RTPB and to the FCC suggest that an additional telephone emergency channel be made available in the two to three-kc. range, and that six additional channels be made available in the 50 to 200-megacycle range. It is also anticipated that from 12 to 16 channels in the 5,000 to 7,000 mega-

(Left to Right): C. D. MANNING, Chicago, Kellogg Switchboard & Supply Co.; MRS. JEWEL BELLION, Chicago; CHESTER RUTH, Chicago, Cook Electric Co., and A. W. SCHELL of the Kellogg company.

cycle range would be useful for emergency service.

Urban Mobile Service

Our concept of what constitutes adequate communication service must be revised and modernized from year to year. What we regarded as the ultimate in previous years may, in the light of wartime developments and anticipated postwar improvement in living standards, prove to be woefully inadequate and not in keeping with the new tools and techniques which engineering progress has given us.

The importance and indispensability of the telephone in our business world is best shown by the fact that the average business executive has in his office, within arms' reach, one or more telephones. Yet, when this same executive is on a train or in his car, this close contact which the telephone gives him with all departments and phases of a large business enterprise, is lost. This gap in our communication system can be closed if a limited number of radio channels are made available to telephone companies for mobile service by the FCC.

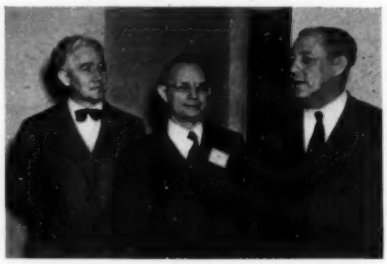
In considering the problem of supplying telephone service to trains, busses, trucks, taxicabs, and private automobiles, it has been recognized that, for technical reasons, such service would necessarily need to be of two types, viz:

(1) Limited area (urban) service.
(2) Extended area (highway) service.

Two categories of service are necessary because of the restricted range of the radio frequencies which it is anticipated could be made available for mobile radio-telephone systems.

Limited area *urban service* would provide regular two-way local or long distance telephone service to trucks, busses, and private automobiles operating in or adjacent to a town or city. The maximum range of such service might be considered as from 10 to 15 miles from the center of the city.

It is difficult to anticipate just what the demand would be for service of this type. Studies made by the Bell System covering New York City indicate that 94 two-way channels operating on shared basis and involving the use of 188 frequencies would be adequate to provide this service. If the Bell System's estimate is correct, then a lesser number of channels would, of course, suffice for some of the smaller cities typical of those in which Independent companies operate.



(Left to Right): JOHN SEXTON, Bristol, Tenn.; L. V. STINSON, Dayton, Ohio, L. M. Berry & Co., and KELLEY McNISH, Bristol, Tenn.

Extended area (highway) mobile telephone service requires a more involved radio system than does urban mobile service.

The frequencies which are likely to be made available for mobile service would be of the "line of sight" or "near line of sight" type. Their useful maximum transmitting range is around 10 to 15 miles in level country; hence to maintain radio telephone contact with vehicles which operate beyond the range of urban mobile service, it would be necessary to establish *zone radio transmitting and receiving stations* at periodic intervals along the route of our main trunk highways. The plan which has been submitted by the telephone group to both the RTPB and the FCC proposes the establishment of operating zones having an effective coverage equivalent to a 20-mile diameter circle. A fixed transmitting and receiving station would be located in each of these 20-mile diameter zones. Mobile stations using this service would be equipped with transmitter-receiver units capable of operating on any one of four channels.

In order to minimize interference between adjacent zones, it would be necessary to employ 32 frequencies which would be so allocated as to result in four clear talking channels in each zone. Under the proposed system of frequency assignment, fixed station transmitters on the same frequency would not be closer than 35 miles, and mobile stations operating on the same frequency would not be closer than 15 miles. One set of 32 frequencies would be adequate to cover the entire country as they could be repeated over and over without interference.

This highway mobile radio-telephone system also would appear to be useful for the purpose of furnishing service to moving trains.

It is apparent that highway service would require a substantial initial investment, due to the necessity of furnishing complete service throughout a route. If frequencies are made available for this type of service, it will most likely first be used on the major trunk highways, as for example: The Pennsylvania Turnpike, the Los Angeles-San Francisco Highway, etc. Inasmuch as Independent companies operate along these routes, they may some day be called upon to decide as to whether or not they wish to furnish highway radio mobile service or merely provide the connecting wire lines.

Use of Radio in Toll

That there is a field of use for radio channels to supplement toll open wire and cable lines is apparent to those who have studied the problem. This supplementary role which radio can play in the toll picture is in the public interest and more than justifies the limited number of frequencies which have been requested of the FCC by the telephone group. I believe that radio channels should prove useful in supplementing both short and long-haul toll trunks. Their use in connection with short-haul toll would embrace those situations in which adjacent communities might be tied together via short-haul radio links instead of wire in order to eliminate frequent service interruptions due to prevailing storms. They would also offer a remedy for those situations where difficult line maintenance conditions existed due to mountainous terrain, lack of passable roads, etc.

Development of point to point radio toll channels would also seem desir-

able in order that telephone companies will ultimately be able to furnish common carrier wide band channels for use of the television companies and looking to the day when television spot pickups may be as common as radio broadcast picks are today.

The extent to which radio channels might be useful in supplementing, or in some cases replacing open wire or cable for long-haul toll purposes would depend on a number of factors. In general, it would seem that long-haul radio channels would offer the following advantages:

(1) Broad band long-haul toll channels could be made available to television companies for television network program distribution.

(2) Long-haul radio channels would be relatively free from interruptions due to severe storms.

(3) Radio channels on important toll routes would be less subject to acts of sabotage during times of war.

(4) When existing wire or cable routes have reached capacity and service is inadequate, radio channels could be used to augment the wire circuits, thus saving substantial line rebuilding costs as well as providing improved service in the public interest.

The question of who should furnish the broad band radio type channels will be needed after the war for transmitting television programs on a network basis has already been raised by FCC Commissioner Jett in an address before the Institute of Radio Engineers in New York early this year. Said Commissioner Jett, in speaking of radio relay systems:

"We know, for example, that relay stations will be installed on towers spaced 30 to 50 miles apart. The transmitters for each channel of communication will be of very low power. Interference will be minimized through the use of directional beams with the result that the same frequency may be utilized in many sections of the country. There is no reason why this network should not also carry network programs for standard broadcasting, FM, facsimile, and private telegraph and telephone circuits for the press, stock brokers, and agencies that usually employ private wire facilities

"Who should be granted the privilege of operating this system? Should it be competitive with the telephone and telegraph services which now operate a monopoly in their respective fields? Should it be competitive radio networks, thereby necessitating forests of towers along the same route? Should the company or companies operating the radio network also be permitted to operate facilities at the subscriber's offices? Should the chain broadcasting company be permitted to own and operate their own radio networks? These are but a few of the questions which will confront the commission."

We in the telephone business think that the correct answer to the question raised is obvious. Certainly, the telephone companies are the logical ones to supply the facilities necessary to transmit television program across the country. How else will wasteful and uneconomic duplication of facilities be avoided—not to mention the forest of towers mentioned by Commissioner Jett. This is definitely a common carrier job.

(Left to Right): ROBERT WISEMAN, H. C. RYON, and W. M. AIKEN, Galion, Ohio, The North Electric Mfg. Co.

(Left to Right): E. W. NASH, Damariscotta, Me.; CHAS. C. DEERING, Des Moines, Ia.; H. M. STEWART, Fort Wayne, Ind.; W. J. MELCHERS, Owosso, Mich.; and LOUIS PITCHER, Dixon, Ill.

The telephone industry has built up the finest wire line service in the world for radio broadcasting networks — it can do equally well for television networks.

Rural Radio Channels

The supplying of telephone service to rural subscribers has always presented a real problem to telephone companies. The Independent field has long recognized its obligation to furnish, if at all practical, service to every rural family that wants a telephone. Thousands of miles of line have been strung into rural areas to reach farmers wanting service even though it was a foregone conclusion that the majority of these lines would never pay out.

In spite of the effort made by telephone companies to reach every farmer wanting telephone service, there are still many families in rural areas that do not now have telephone service.

Commissioner Durr of the FCC in a recent speech in New York stated that a large percentage of the farms in some sections of the country are without telephone service—he said that in a few states as high as 98 per cent do not have service. He suggested that possibly what is needed is a "telephone Rural Electrification Administration." Commissioner Durr's observations are particularly interesting at this time and I am sure that all telephone men in our group will hasten to assure the commissioner that we share his interest in making it possible for all farmers to have telephone service.

We, of course, recognize that his suggestion of a "telephone REA" is not the answer to the problem. If we analyze the problem of why there are not more telephones in some rural sections of the country, we will come up with three observations, viz:

(1) Many farmers consider a telephone a luxury, even though the monthly rate is less than $2.00. They are willing to assume the hazards and inconveniences that accrue from not having a telephone. These same farm-

(Please turn to page 94)

A CONVERSION TO DIAL OPERATION

By WARREN B. CLAY
Manager
Hutchinson (Minn.) Telephone Co.

IN CONSULTATION with B. C. Burden some weeks ago about the program for the plant committee at the national convention, he suggested that inasmuch as our company had converted to dial operation last year, it might possibly be of interest to some of you to hear of the methods used in the cut-over.

Perhaps it will be well to describe our plant as it existed prior to the conversion and then outline the various stages of the work as it progressed.

The plant is located in Hutchinson, Minn., a town of 3,800 population. The principal industry is dairying and associated activities. At the time we began planning conversion to dial operation, we were serving a total of 1,481 stations, being composed of the following classifications: 175 B-1, 38 B-2, 138 R-1, 12 R-2, 550 R-4, 78 B-Ex, 27 R-Ex, and 463 rural telephones.

Local telephones were common battery, and rural telephones, magneto, being served with a manual switchboard of 520 common battery and 50 magneto lines.

The outside plant consisted of underground cable, mostly 22-gauge in the city, with from one to three terminals per block, depending upon the saturation, and rural lines, metallic circuits with 12-gauge iron wire from two to 16 miles in length. Approximately 30 per cent of the business telephones were served entirely by underground cable with no exposed terminals.

In consideration of converting to dial equipment, there were several points that presented themselves to us as to just how far we should go. For instance, the question arose whether just the city should be converted and the rural telephones remain manual because of the length of some of the rural lines, or whether the rural telephones should be converted to dial signaling and local battery talking, or whether it should be a complete conversion to common battery talking and dial signaling. We finally determined on the latter course because we knew that one operator would be able to handle just the toll and information traffic, but could not handle the rural traffic if it were left manual, and also, by going to common battery talking in the country, we could have more uniformity in our telephone instruments.

With these points settled, we ordered new equipment composed of the following: 700 lines, 10-party harmonic ringing equipment for the city, 70 lines, 20-party code ringing equipment for the rural telephones, and a one-position manual switchboard to be used for handling toll, information, intercept, police and fire signals.

WARREN B. CLAY

Following the decision as to the type of equipment to be used, the public relations work necessary to put the improvement into effect was started.

I would like to say just a few words as to our work along these lines. It was necessary for us to ask for an upward revision in rates in order to make the conversion possible. In Minnesota, as in most other states, this meant a public hearing concerning the new rates to be placed in effect and also to determine whether the public wanted this type of service.

Simultaneously with the announcement of the plan for conversion to dial operation, which was published in the local paper, a letter was sent to each subscriber telling him why the change was proposed, what the service would be like, and also his old rate compared with the proposed rate. Also inserted in this letter was a small folder showing the types of telephones to be used. In addition to the letter and folder, there was a return postal card enclosed, which was to be filled out by the subscriber and returned. The questions to be answered were whether the subscriber approved of the change to automatic service and the higher rate, and also what type of service and instrument he wanted when the change was made.

The returns on these cards indicated that the public was wholeheartedly in favor of the change, the returns being about 11 to one for the conversion. The returns on these cards not only gave us an indication of how many and what type telephones to order, but also were a fine exhibit to have at the public hearing before the Minnesota Railroad & Warehouse Commission. At the hearing there were no adverse appearances, so the higher rate was granted and the plans for conversion approved.

Immediately after the new rates were approved, we entered our order for all the telephones necessary and then began the work of reconditioning our plant to effectually carry dial signaling and common battery talking.

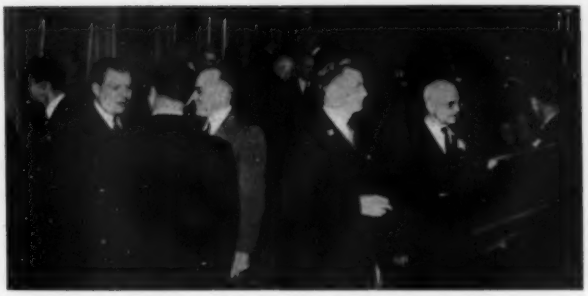
The work we considered necessary on our rural lines before cutting over to automatic service was the following: Re-route and re-group some subscribers; run new lines so the number of subscribers could be reduced to an average of about 10 parties per line; eliminate all old splices by replacing them with compression type sleeves, and, in some cases, replace old wire.

Trees were trimmed, slack pulled and, in general, those necessary things were done to put an outside rural plant into first class shape. We also replaced a substantial amount of drop wire, both in the rural and city plant.

Since all our outside city plant is underground, little work was necessary to put it in shape. About all we did in this connection was to thoroughly test the cable plant and replace drop wire where necessary.

While this work was in progress, an addition was built to the existing building to house the new equipment—both automatic and the new manual board. Although we had sufficient room in the old building to install the manual switchboard, we felt that it would be better to have all the equipment in the fireproof addition.

New telephones, ordered for the conversion, consisted of handsets, either desk or wall type, for the city subscribers, and ordinary wall sets for the rural subscribers. I might add that the rural telephone was equipped with a latch on the receiver hook so



Groups of operating men gather in the convention halls prior to opening of group conferences to talk over wartime operating problems.

the subscribers might listen in without interfering with the service. We felt that this was necessary because of the fact that the rural patrons wanted to have code rings as in the past. This, in spite of the fact that they might have had selective ringing. Although it would have been possible for us to save some money by converting our old telephones to dial, we felt that it would be better to have all new equipment for we were sure the service would be better.

After completing the work on the outside plant, we started to change the telephone instruments, first completing the city and then starting on the country telephones.

The problem then arose as to just how we would proceed with the change of instruments in the rural territory for these were the magneto telephones that we were going to replace with common battery sets. We finally decided that perhaps the most logical way, and least expensive, would be to convert the rural lines to common battery on the old manual board, because by this method we could change over one or two lines at a time and then have a simultaneous cut-over to automatic when all the lines were changed. The actual method of converting the rural lines was as follows:

The crew would start out on a line, removing the old telephones as they worked out to the end of the line. When all the magneto telephones were off the line, the men would call in and have the wire chief run a new jumper to one of the common battery lines on the board and also test the line after it had been changed to common battery. If the line were all clear, the men would then work back towards town, putting in the new telephones until the line was completely changed. The whole process on each line was accomplished very quickly so that in no case was any subscriber left without service for more than a few hours at the most.

One of the chief advantages of this method of conversion was that any trouble developing when the line was changed to common battery could be cleared while the men were out changing the telephones. As we rarely changed more than one or two lines at a time, it took just a short while to clear up the little trouble that did develop. We were also sure that if the lines and telephones work satisfactorily through an old common battery board, they would surely work when we converted to dial.

As this work was being done, new cable was half-tapped to the old, and runs were made to the new main frame. This work required a great deal of testing to be positive that the numbering of cable pairs on the new main frame would correspond with the numbering on the old frame. We felt that any time spent in checking and rechecking the cable plant and new main frame would be well spent, as we wanted to eliminate all the potential trouble that we could before the cut-over.

WESLEY M. ANGLE (left) and LLOYD SPENCER, Rochester, N. Y., both of Stromberg-Carlson Co.

Upon the completion of the installation of the equipment, and while testing of the equipment was in progress, jumpers were run on the new main frame as each line to be used was hooked up, and separators inserted in the line on the protector side of the main frame. We did this in preference to picking out the line at the relays, for in this way the covers could be left on the line relay equipment, thus keeping the relays protected from dust.

The last few days before the cut-over, which was scheduled for a Saturday night, were spent in checking the cable again and also the jumpers on the main frame. We selected a Saturday evening for the cut-over as we would then have all day Sunday to try and clear up any trouble that might develop when 48 volts were put out on the lines.

On the night of the cut-over, we waited until all connections were down on the old board, then pulled the main fuse and cut off the cable at the old main frame. Immediately after this was completed, the separators were taken out of the new main frame and the actual cut was completed, the elapsed time being about seven minutes.

Following the actual cut-over, testing began to discover how many permanents, grounds, etc., would develop. This of course, was the test of our previous work. We were extremely fortunate in discovering only one case of trouble on the outside plant, that being the carbon on one pair of a protected terminal which burned to ground when the higher voltage was put on the line. Three or four days later, one cable pair went short which probably was due to the higher voltage. These two cases of trouble were the only ones occurring because of weak points in the outside plant, and proved, at least to my satisfaction, that work performed prior to a conversion is worthwhile. Of course, there is no way of telling how many cases of trouble would have occurred had we not done the extensive work that we did, but I am satisfied in my own mind that they would have been numerous.

The most difficulty we encountered was due to the lack of knowledge on our part on the installing of telephones on the rural lines. This trouble, which could have been avoided, was that ringer coils on the rural telephones, all being straight line, would cause the bells to jingle when anyone dialed, and, as the dial impulses were of different length, depending upon the digit dialed, the jingle of the bell would many times sound like a code ring. This difficulty was overcome by placing

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PREVENTIVE CABLE MAINTENANCE

By E. H. DANNER
Vice President
Telephone Services Inc.

IN PRACTICALLY every telephone exchange, whether large or small, there is some point, maybe only the cable entrance to the office, where the exchange service lines and quite often the toll lines serving that exchange pass beneath the sheath of lead covered cable. Insofar as the outside plant of a telephone company is concerned, more lines can be put out of service by a cable sheath failure than by the failure at one point of any other type of circuit carrying plant. In the average size exchange, the investment in the cable plant is approximately one and one-half times the investment in the open wire plant, and such cable plant investment is approximately 10 to 20 per cent of the total plant investment.

All of this leads to the point that the cable plant is a vital part of the telephone plant, both from the viewpoint of the subscriber who wants trouble free service, as well as the telephone company who desires to provide a good grade of service at a minimum of expense. It is, therefore, important that proper cable construction methods and protection plus maintenance practices be followed if a normal, trouble-free service life is to be secured from the cable.

Rather than basing this paper solely on personal experience, a survey was made of a group of representative telephone companies in order to secure the benefit of their experience. Following are the answers received to a questionnaire sent to 10 companies, serving 370 exchanges and approximately 405,000 stations, in widely scattered geographical locations. The companies range in size from a single exchange company serving approximately 1,600 stations to a company of 118 exchanges serving 69,000 stations and one of 23 exchanges serving approximately 180,000 stations:

(1) Seven of the 10 companies advised that they had in effect a program of preventive cable maintenance.

(2) All seven of the companies replied in the affirmative to the question of whether such a program reduced cable maintenance cost, reduced service interruptions and extended the useful service life of the cable.

(3) In response to the request that they list, in the order of their frequency, those causes of cable trouble which they most generally experienced, the following was reported:

Cause of Trouble	*Ranked in the Order of Their Frequency*				
	1st	*2nd*	*3rd*	*4th*	*5th*
Ring wear and ring cuts	5	3	1	–	–
Lightning	3	1	3	–	–
Sheath crystallization	1	4	2	–	–
Tree clearance	1	–	2	2	–
Power crosses	–	1	–	1	2

The cable plant of one of the companies is wholly buried. That company listed trouble caused by excavations for sewer and water service as the most frequent source of trouble.

One of the larger companies serving on the West Coast listed, in second place, trouble caused by holes bored in the cable sheath by a type of beetle prevalent in the greater portion of their operating area.

(4) In reply to the question that they list, in the order of their importance, the five points which in their judgment, if carefully checked, would contribute most toward reducing the number of cases of cable trouble, the following was reported:

Points to Check	*Ranked in the Order of Their Importance*				
	1st	*2nd*	*3rd*	*4th*	*5th*
Method of supporting (rings, spinning, zinc chips, etc.)	4	3	1	1	1
Strand tension	4	2	–	–	–
Protection	1	2	1	2	–
Tree clearance	1	–	3	2	2

(5) Five of the companies advised that they had in effect some procedure for testing vacant cable pairs from the central office. One company stated that it had such a program in effect for about a year, but discontinued it as enough information was not secured from such testing procedure to warrant its continuance.

(6) All except one of the companies stated that they maintained a record of cable openings and made an analysis of the causes of the trouble requiring such openings.

Based on the above information, as well as discussions of this subject with representatives of other telephone companies, it appears that plant men quite universally recognize the need for, and the advantages of, a planned program of cable inspection and preventive maintenance and that while most of the larger companies have such a plan in effect the majority of the smaller companies do not.

One of the more frequent reasons given for not carrying out such a program is that they do not have available the manpower or the skilled workmen. Considering that cable trouble is one of the most common causes of service interruption, and that such trouble generally occurs during bad weather

(Left to Right): SHERMAN BROOKS, Minneapolis, Minn., Page & Hill Co.; J. C. CROWLEY, JR., St. Paul, Minn., and P. M. FERGUSON, Mankato, Minn.

LEFT PHOTO: ANN JONES of TELEPHONY and F. C. GOKEY of the Highway Trailer Co. RIGHT PHOTO: This group was getting ready to attend a session of the USITA convention when Cameraman Ray Blain happened along.

when more trouble than normally experienced occurs, due to defective drop wire insulation, open line wire leakage, blown fuses, etc. It is apparent that manpower is actually conserved if a preventive maintenance program is carried out. As to the need for skilled workmen, it goes without questioning that a much greater skill and more experience is required to locate and clear the average case of cable trouble than is required for inspecting a cable and removing the possible cause of such trouble before any damage has occurred.

It is certainly easier and more pleasant for the workmen, and less expensive for the company, to have the regular working hours spent on the inspection and maintenance of the cable plant than it is to clear the actual case of trouble under adverse weather conditions, generally at the premium rate of overtime pay. As for the subscriber, he soon becomes irked if his telephone goes out of service every time a thundercloud passes over.

Estimates of the average cost of clearing a case of cable trouble range from $20 to $40 of which a considerable portion is the labor of the workmen testing, locating, clearing and permanently repairing the trouble. One of the companies included in the survey advised that they had reduced their cable maintenance costs approximately 12½ per cent and the number of service interruptions, due to cable trouble, approximately 46 per cent through a program of inspection and maintenance. Another company which had in service a considerable amount of old cable, the replacement of which was deferred due to wartime restrictions, reduced the number of service interruptions due to cable trouble approximately 50 per cent the first year of their having a program of cable inspection and repair.

Considering the average sized company with the normal amount of cable plant, the following outline of a suggested plan for carrying on a preventive cable maintenance program is given along with certain suggestions as to specific points to be checked:

Records. The minimum records required to properly carry out such a plan are:

(1) An accurate cable map showing the location of the cable, size and gauge, length of each section of different size and gauge, count of the cable, terminal location, count of the terminal and whether it is protected or unprotected, a notation of pairs not in service and where they are lying idle, the location of manholes and their sizes, type and location of duct runs.

MAJ. H. E. BILLINGTON (left), Dayton, Ohio, and F. M. PARSONS, Chicago, Kellogg Switchboard & Supply Co.

(2) A cable record showing terminal location and count, the line number assigned to working pairs and the terminals from which such pairs operate.

Supplementing the above records, it is suggested that some form of cable trouble report be used in order that the plant supervisor will always be fully informed as to the openings made, the trouble found, the cause of the trouble, how it was cleared and the requirements for making a permanent repair or replacement.

Tools. The tools and testing equipment available and required in the clearing of trouble and the proper maintenance of cable plant are important. The following units are recommended as being a profitable investment for the average sized company in that they will save time and assist in the performance of a workmanlike job.

Cable tone test set and exploring coil, ohmmeter and voltmeter, arc welding cable repair kit and wheatstone bridge. It is of course, assumed that the regular cable tools such as a chipping knife, hammer, furnaces, wiping cloths, cablemen's scissors, thermometer, hand test telephone, etc., are available.

Other tools which will be valuable additions to the above basic units are the strand dynamometer, direct reading ground resistance megger, gas pressure testing equipment and the conventional type insulation resistance megger. It is important to remember that the tools do not make the man, but training in the proper use of such tools will multiply many times the efficiency and skill of what would be an average workman without such tools.

Planning the Program. The next step is to plan a schedule of inspection, to select the cables in the order in which they are to be inspected and to determine the frequency of such cable inspection. Most companies follow the plan of inspecting their cable every two years, but, of course, the frequency of such inspection varies with the importance of the particular cable, as well as its condition. A trunk cable connecting a main exchange and a satellite office, or a toll entrance cable should be inspected more frequently than a 25-pair cable serving a residential area because of the greater number of customers served and their comparative earning capacities. (If a planned two-year program of inspection is set up and it takes four years to complete the first inspection, do not become discouraged as the second inspection will move much more rapidly due to the elimination of the faults found on the first inspection.)

In order to carry out the inspection as economically as is possible, the use of highly skilled workmen must be held to a minimum. The major portion of such an inspection and maintenance program does not require the services of a skilled cableman and, therefore, it is suggested that a workman be

This foursome from Automatic Electric Co. are (left to right): STAN SHERMAN, K. W. GRAYBILL, H. E. CLAPHAM and L. L. RUGGLES.

trained with respect to what to look for under such an inspection program and how to correct the faults that are found. Probably no better guide can be given as to the points to check than those enumerated by the different companies in the survey referred to above.

Method of Supporting Cable. The point receiving first place in the survey is the method used in supporting the cable. It is therefore suggested that for ring supported cable the following points be checked in order to eliminate ring wear and cutting:

(1) Check cable, at least, at each pole to determine the sheath damage, and place cable rings, saddle or zinc clips at the first two or three suspension points on each side of the pole. If the cause of trouble, as revealed by an analysis of past cable trouble reports, shows considerable ring wear or cutting in the section under inspection, it is then advisable to ride such sections of cable and make a complete inspection.

(2) Rings should be straightened and respaced, with defective rings replaced. In replacing such rings, be positive that the same type and size of ring is used as that in place in order that the normal level of the cable is maintained.

(3) Rings should not be used to suspend the cable where strand splices occur, as too frequently such rings become "cocked" at an angle at which the entire weight of the cable is borne by one or two rings. Instead, support the cable at such points by the use of zinc clips or lashing wire.

(4) Rings should also be replaced with zinc clips or lashing wire at corners and crossovers.

(5) Grade clamps should be placed at the following locations:

(a) Where cables dead-end or connect to underground cables.

(b) The pole on each side of an underground dip in an aerial cable.

(c) Bridge splices involving cable of 100-pair or larger.

(d) Cables on grade of 5 per cent or more.

(e) Corners where pull is away from the pole or a pull of five feet or more toward the pole.

(f) Poles on each side of railroad crossings.

Since the spinning of cable in lieu of using rings has just recently come into the picture, insufficient experience has been gained to be positive as to the points which should be watched. The following checks are suggested not because of any frequency of their occurrence but because they have been found when inspections have been made and there is a possibility of sheath damage occurring:

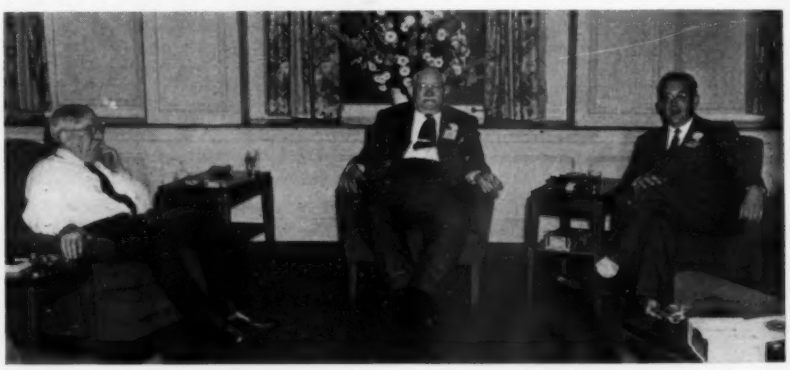
(1) The initial practice was to cover the cable at strand crossovers, dead-ends and strand splices with a protecting lead shield and to spin the cable snugly to the strand. Several instances have been found where the protective shield has slipped, especially if it is held in place only by means of the spinning wire. The accepted practice now is to suspend the cable at such points by means of zinc clips. The Bell companies now use a strand connector at the pole to eliminate the strand splice in the span.

(2) In several installations it has been found that if the old figure eight lashing wire tie with a piece of lead sheath to protect the cable is used at the pole, the lead shield has slipped out of position and the cable rubs directly against the cable support.

(3) If the old-style span clamp, which is attached to the strand by means of a one-bolt clamp, is used, the sheath should be protected. Most companies do not consider it good practice to use the old-style span clamps with lashed cable. The Bell companies now have a new type of span clamp especially designed for use with lashed cable.

It is generally accepted that the spinning method of supporting cable will do much toward eliminating cable trouble, but it is not wise to consider it a cure-all remedy for all cable ills. Instead, frequent inspection should be made of such installations to determine the weak points, if any, before any material damage can occur.

Tension of Strand. In second ranking of the points to be checked to prevent cable trouble is strand tension. Most plant men agree that the placing of the messenger strand at the proper tension is probably the most important factor contributing toward the trouble-free service life of cable. Despite this common agreement, there is probably more cable suspended on strand which is excessively tight or slack than there is at somewhat near the proper tension. The proper time to check this point is when the construction work is performed, as the process of removing or cutting in slack after the job is completed is a difficult and expensive process, especially if the section in question has a high terminal development or numerous branch feeders.



(Left to Right): H. B. McMEAL, W. L. RUNZEL, and W. L. RUNZEL, JR., Chicago, Runzel Cord & Wire Co.

Strand that is too tight is generally indicated by bowing at the poles and waviness in the span. If both the strand and cable are too tight, then no bowing or waviness may appear, but very often sheath crystallization and ring wear occurs due to excessive vibration. Too little tension causes excessive ring wear at the peaks occurring at the poles.

The tension of strand, with cable in place, can be easily checked with the offset type of dynamometer, but if such is not available the same check

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ADEQUATE RATES FOR SMALL COMPANIES

By R. F. LUCIER
President
United Telephone Co., Inc.
Ohio Telephone Service Co.

WE CAN ALL remember back to a time, not so long ago, that was referred to as a period of "Profitless Prosperity." As far as telephone management is concerned, the present might be referred to as a period of "Worrying Prosperity." To the layman it is not apparent why his friend in the telephone business should be so worried when revenues are at an all-time high. But telephone management knows only too well just how fickle those revenues, and particularly *toll* revenues, can be.

He knows that with the cessation of hostilities, the repeal of gasoline and tire rationing and the return home of the service men in camps, a large portion of the inflated toll revenues will vanish into thin air. But what troubles him even more than the loss of revenue is the fact that for the first time in his business career he has lost, to a very great extent, control over operating expenses.

During the early 1930's, the telephone business weathered one of the worst depressions of all times and came through in better condition than most industries, but at that time, management still had full control of operating expenses. Today with a wage scale set by law, a compulsory overtime scale by law, and ever increasing taxes over which he has no control, he finds himself in an altogether different situation.

I am not arguing against the justice or necessity of these things, but only citing them to point out and better understand the situation in which telephone management finds itself.

So it looks as if we had better confine most of our worrying to the thing that we can do something about, and that is the securing of adequate exchange rates. It is about this matter which I presume to speak, and since Mr. McCulla has covered the securing of additional rates by conversion to a higher type of service, I will confine my remarks to the adjustment of rates on the existing service.

Some three years ago, my company found itself in the position I have just described, and, while the situation at that time was not as distorted as it is today, we decided that if we were going to survive, it was high time that we secured exchange rates which were more nearly in line with present day operating costs. Our rate structure, as it then existed, had not been adjusted for from 20 to 30 years and was based on traffic costs of 15 to 20 cents per hour, and in agency exchanges much lower than that, and on plant wages of 30 to 50 cents per hour.

After doing our own imitation of Dr. George Gallup among our business friends and acquaintances, we found that our subscribers were not only ready for an adjustment in rates, but had been wondering just how we had met the situation thus far without such an adjustment.

I hope you will pardon me for relating the experiences of my own company. I do not mean to infer that the ideas we used are right and that all others are wrong, but the fact these ideas were used and were successful are being passed on to you for whatever they are worth. I might further say that many of these ideas were not only those of the people in our own group, but came from the industry as a whole. We are indebted to Mr. O'Connell of the Commonwealth, Mr. Engh of the Pennsylvania Telephone Corp. for certain material, and to a very fine article by Vice President Cooper of the American Telephone & Telegraph Co. that came just at the time we were wrestling with the proper presentation of the "Cost of Money" to the public service commission. I also want to pay tribute to my own associates. Since the proper handling of a rate case requires the finest kind of team work, it could not have been pushed to a final and successful conclusion without their fullest cooperation.

Some of the matters that I will mention here might seem rather elementary, yet a rate case, like a military campaign, should be very carefully planned in detail, and everything that is done and every piece of material used should have but one purpose—to convince both the public and the public service commission that the rate adjustment is not only necessary, but

In this group are (left to right): STANLEY H. MANSON, COLBY H. KNAPP, and DR. RAY H. MANSON, all of Stromberg-Carlson Co., Rochester, N. Y., and EARL O'ROURKE of the T. J. Moss Tie Co., St. Louis, Mo.

(Left to Right): W. H. BECK, Indianapolis, Ind.; JOHN A. HARBAUGH, Sullivan, Ind.; E. J. FORD, Fort Wayne, Ind.; P. B. HARBAUGH, Sullivan, Ind.; HUGH BARNHART, Rochester, Ind.; ROSCOE D. PONTIUS, Rochester, Ind.; LESLIE E. DYE, Louisville, Ky., Brown Wood Preserving Co.; NEIL M. BOTT, Rensselaer, Ind., and FRANK E. BOHN, Fort Wayne, Ind.

absolutely essential to the continued rendering of adequate service.

Very early in the game, proper legal and engineering counsel should be employed. I know of at least several very deserving rate cases that have been lost because management went shopping for bargains in these two fields. Once selection is made, then the attorney, plus the engineer, plus the staff of the company that is going to do the field work, prepare the exihibit, and do the testifying before the commission, begin.

In our case, each department was charged with its particular job and each knew exactly what his particular job was to be. From then on, it was a matter of coordination and team work between all concerned. With plenty of conferences from time to time, the work progressed smoothly right up to the day of the hearing. Our commercial department was charged with: (1) Determining the kind and amount of advertising; (2) the education of our own employes in regard to the need for rates; (3) telling of that story to the public both by word of mouth and through newspaper advertising (in this word of mouth advertising they were assisted by all departments); (4) determining the rates that were to be applied to the various exchanges and (5) preparing such exhibits as were necessary, showing the effect of the new rates if applied, etc.

Traffic people were charged with maintaining service at a very high level. That they did a good job is testified to by the fact that we did not have one complaint based on poor service, before the commission, although some 72 exchanges were represented.

Plant was charged with a general "dolling up" of the property so that the most favorable impression might be made with the commission engineers at the time of their inspection. Much of this work was done with two-man crews cleaning up bracket lines, resetting poles, pulling slack and replacing glass. We are sure that this paid big dividends.

Accounting was charged, together with our engineer, with ascertaining "original cost" (this was done via the accounting method) and working with the public service commission's accountants in preparing the vast number of exhibits which are necessary in such a case. I might say here that the method of arriving at "original cost" was agreed upon beforehand with the representatives of the public service commission and, as a consequence, our valuations were very close together in our final determination. Through our attorney and engineer, the public service commission was appraised of our progress, and matters of a controversial nature were eliminated as far as possible. This was done in order that the proceedings might be carried on in an atmosphere of confidence instead of one of suspicion.

(Left to Right): T. A. BOYD, New York City, E. M. HIESTAND, Madison, Wis.; FRANK DAVIES, Long Beach, Calif., General Telephone Directory Co.; and H. P. KARNES, Lafayette, Ind.

I previously told of the function of the commercial department in handling the advertising and the telling of our story, but the most important pieces of advertising and publicity were handled and timed to appear in the newspapers of our territory just a day or two before the actual filing of the petition with the public service commission. This consisted of a "reader" explaining again in detail the need for additional rates and a large display ad, showing the existing rates and those being applied for. This not only allowed us to tell the story as we wanted it told, but also to tell our subscribers the exact rates for which we were applying. All uncertainty and possibility of their first gaining the news from some newspaper correspondent's story that might present the matter in a very unfavorable and detrimental light was eliminated.

It goes without saying that the teamwork previously mentioned should carry over into the hearing itself. I recently attended a hearing where it was hard to tell who was the most confused, the attorney trying the case, the witness who was trying to answer his questions, or the commissioners who were hearing the case.

Oral testimony should be used principally to strengthen exhibits that are being presented. We found that, by reducing all questions and answers to writing, this was accomplished. Many hours spent by our attorney and witnesses going over and over these questions and answers paid big dividends in the end. I do not mean to infer that witnesses were not allowed to elaborate on their answers where they had their subject well in hand. Rules of evidence are not as strict before a commission as before a court of law and this can be and was used to good advantage.

I will not go into more detail in regard to the many hours of hard work, the heart-breaking delays, etc., that went into the preparation and trying of our case, but I sincerely believe that it was well worth the effort and that if we had not taken the steps we did, we would have been in serious trouble today. I further believe that most Independent companies, with the aid of good legal counsel and engineering advice, together with the staff and employes of that company all working together, can get the rates to which they are entitled.

There never was a time when the public was as understanding of the problems of the utilities as they are today. With little or no opposition from the public, it makes it very easy for the public service commissions to decide in your favor. If you doubt the fact that the public is receptive, I will cite the fact that of our 72 communities represented, the representatives of only three communities were represented at the hearing, and only one of those representatives stayed until the end of the hearing, the others having been convinced in the meantime.

Of the 43 newspapers in our territory, only one printed matter of a detrimental nature and even that one later printed an article that was, to say the least, much more friendly. That should convince even the most skeptical that the public is ready to go along with you in obtaining the rates you need and to which you are so justly entitled.

ADVERTISING'S GREATEST OPPORTUNITY

By LEON F. ROBERTS
Commercial Manager
Jamestown (N. Y.) Telephone Corp.

I WOULD like to talk to you about advertising in general and more particularly about advertising in the Independent telephone field. Right away I'd like to say that I am not going to pose as a toplofty critic of what others have been doing or are doing in advertising, because I am not sure that I know better than the next man how his job should be done.

What I do propose is to attempt to share with you what has come to me in the form of ideas and philosophy about the kind and type of advertising that can be helpful to telephone companies everywhere. During the past year it has been my happy lot to address at least four telephone groups on this subject. . . .

Frankly, four speeches have about exhausted my resources on this subject, and so today this discussion will be, in part at least, a recapitulated rehash of a rather recent and redolent repertoire. Incidently, if any of you seem to recognize any of the truths I shall try to lay down for you this morning, I would like to remind you of Francis Welch's sage observation, made at last spring's USITA conference, that if you steal from one writer it is called plagiarism, but if you steal from several writers it is called research. This speech of mine today is strictly research, although I have tried to avoid a literal application of Montaigne's famous reference to his own work, "I have gathered a posey of other men's flowers, but only the ribbon that binds it is my own."

Before we take up the subject of telephone advertising, it seems to me that we should first discuss a few fundamentals and broad principles. First, I would like to emphasize what I consider to be the need for careful, sound and, above all, original thinking in connection with advertising, because I am certain that our advertising job in the future is going to be done in a new and unfamiliar world, a world in which so many of the old landmarks of belief and convention, of policy and practice by which we steered our advertising course in yesterday's world, will have shifted or disappeared so that we must then find new ones, or steer by dead-reckoning, by instinct, or perhaps by plain hunch.

You have the right to demand that I be more specific. If being a successful practitioner of the sale of goods by the use of the printed and spoken word means anything at all, it must mean the saying and doing of things that will move people's minds toward some desired action, and we cannot move people's minds unless we know where their minds are *now*. Well, do *you* know where people's minds are today or are likely to be tomorrow? In order to try and do this, don't you

LEON F. ROBERTS

agree with me that we should clear out all the built-up attic accumulation of last year's beliefs and prejudices from our *own* minds in order to make room for some brand new conceptions?

Now, what is the purpose of all the questioning we hear today on all sides? It is a desire for a better world; something that is as broad as humanity itself, and that is a great spontaneous urge on the part of all human beings everywhere to try to get out of the blood and the misery and the tears of this war, with all its wastage of human life and material resources, some of the makings of a better world. If, at such a time, the human race can think and act wisely, a great opportunity awaits us.

It has been called postwar planning, and it is what people are fighting for —*their* personal stake in victory. Channelled by proper leadership into constructive effort, this universal desire for a better world can make the postwar age an age of miracles. We in the telephone business have a great part to play in this postwar world and in the creation of some of these miracles.

Not so long ago I talked with a young soldier who told me he thought there were too many old men running things—too many old men in politics, in business and in finance. "We don't mind you guys being old in years," he told me, "but what we don't like is your being old upstairs, in your heads. Some of you don't seem to realize that the world is changing." I would not hazard a guess as to how many of us would deserve that stricture, but it might be a healthy thing for us in the telephone business, and perhaps more particularly for us in the commercial end of the business, to try and take ourselves to pieces privately and see how old we are "upstairs."

Let us bear in mind that the world of 1939, and before, is definitely gone, never to return. The world of 1944 is a temporary war-world of artificial conditions. The day the war ends, that world starts to die. Then, indeed, must we look to the men and women who, clear-eyed and unafraid, look forward with eager anticipation to being a part of that better world for which all people hope and for which all people, great and small, have fought this war.

We have said that advertising is the moving of people's minds by the use of the written and spoken word, to induce a desired action. We are facing, then, my friends, advertising's greatest opportunity. Through the medium of advertising we can not only get things done, but also we can get things understood. Through intelligent advertising we can ventilate woozy thinking and can help America face the bright new postwar world in terms of hard realities and clear purposes rather than in terms of worn-out shibboleths and lazy platitudes.

When Pearl Harbor woke us up, advertising committed us to unity of purpose, to fantastic production, to selfless effort. Without political quibbling our leaders determined the program. The people found it good, supported it magnificently. Advertising of it shaped our destiny to continue as a free people. All those resources, all that determination, can be converted to winning the peace at home and to shaping our destiny in the future.

Now today, most of us in the telephone business have few or no products to sell, but, in my opinion, that

is all the more reason why we should advertise, why we should use the most potent of weapons: The power of suggestion as employed by the radio and the psychology of print as used by the newspaper. Through these mediums we can inform the public, of which we are but servants, of the reasons *why* we cannot give them telephone service and of the reasons *why* our service is not as efficient and speedy as it was in more normal times.

In a hotel in Chicago recently I saw this sign over the manager's desk, "The customer's memory will last longer than the war." This raises a point I would like to emphasize during the few minutes remaining. I would like to invite your attention to a comparatively new approach in the field of public relations, which the commercial department of the Cincinnati & Suburban Bell Telephone Co. has chosen to call "Overtones of Service."

This hotel, I noted, uses overtones in giving service, not because it is catering to new business now, because it has more than it can handle, but because it is looking ahead to the time when it will have some empty rooms to sell. This hotel, and many other businesses I might mention, realize that it is more important to advertise in these times than it is in normal times when all is comparatively clear-sailing and the public's nerves are not submitted to the strains of modern warfare and all its irritating complications. Alert business men know that some day this war is going to end, and that today's applicants for services and goods are tomorrow's customers, and that the time will arrive when we will need them more than they need us now.

Success in selling the customer a year or two from now may even depend on preliminary promotional policy put into effect right now, when there isn't very much to sell the customer. Every business, and especially the telephone business, must keep in mind that it has been compelled, under pressure of war, to ask the public to make sacrifices, and that the public won't forget it very soon. The logical public relations policy, therefore, is to offset that distasteful impression by tactfully promising, and definitely planning, to give the customer more in the future than he ever had before.

While many of us do not have anything to sell right now, we do have a golden opportunity to sell good public relations as a sort of psychological substitute, or build-up for the market to come. In fact, there should never be any shortage in good public relations. Good public relations must be sold continuously, in war and peace, day and night, and in all seasons. It is not

GEO. W. RODORMER (left) and E. WINSTON RODORMER, Chicago, Reliable Electric Co.

something that can be shifted off to some paid "public relations expert" and forgotten about. It cannot be practiced intensively on Monday or Tuesday and forgotten for the rest of the week. It must, in truth, be practiced, Sunday, Monday and always.

Today, on every hand, we hear of substitutes, priorities, rationing, and we see posted everywhere lists of "don't do this" and "don't do that — don't, don't, don't!" Many of these "don'ts" are necessary advice in these critical times, but let us not forget that the average American citizen is a pretty independent fellow, and he doesn't like to be pushed around or told what he can do and what he can't do.

A writer of one of our trade publications some months ago laid down the premise that it is not the function of private business to lay down rules for the public. It is the function of business to serve the public. The more it serves, with less emphasis on managerial restriction, the better public relations will be. Who pays the piper calls the tune. That's the customer.

The street railway business, which used to insult its riders with signs, such as "Don't Spit on the Floor" and "Positively No Smoking Under Penalty of the Law," virtually went into bankruptcy before it learned how to say "Please."

Before World War I, a number of railroads, then having a near-monopoly on passenger traffic, resisted the installation of comfortable seats and bright modernized coaches with the excuse that too many coachriders would stain, cut, or burn them. Came the automobile competition and the roads *had* to put in crack trains and special services—including a Scotch and soda bar on the Empire State Express. Surprisingly to the railroads, the travelling public invariably responded admirably with only a minimum of vandalism.

Moral of this seems to be that if you treat people like cattle, they behave accordingly. I cite these things merely to show that it pays to court that indefinable and sometimes ephemeral and ethereal thing, but always important asset, goodwill. And so, I say, in these times especially, it is important to practice overtones of service. Intelligent advertising is a means to this end.

"How much should my company spend a year on advertising?" is, naturally, the first question many of us ask. In one year—1943 I think it was—the Bell System spent $24,000,000 in educating the public to conserve facilities, and half of this amount, $12,000,000, was spent for advertising through newspapers, magazines, radio stations, bill inserts, etc. If the Bell people—and let me say right here, they know their business when it comes to advertising—spend $12,000,000 or $24,000,000 a year, how much should the Independent spend? I leave that for wiser heads than mine to determine, but if you would like a guide I can give you one. I have been informed by authoritative sources that in the public utility field, 1 per cent of the annual gross revenues is not regarded as excessive, and some utilities spend more than that.

In other words, if you gross $300,000 a year, your advertising budget might well be $3,000; or, if you gross $50,000 a year, an annual outlay of $500 would not be excessive. (Large department stores spend 5 per cent, and sometimes more, but, of course, herein there is no analogy.)

As most of you know, an effective instrument by which can better be steered the course of advertising by Independent telephone companies is now available. I refer, of course, to the *Telephone Advertising Institute* which has been set up in Chicago by a special USITA committee which was appointed a year ago. It was my good fortune to be made a member of that committee, and I have never served on any committee from which I benefited so much, and which gave me more enjoyment and satisfaction.

I am not going to report on the work of the committee or outline the plan of the institute, because both of those jobs are going to be done by the energetic, capable and affable chairman of the USITA Advertising Committee, R. A. Phillips.

Meanwhile, I do want to say that, in my opinion, no more important enterprise than this Telephone Advertising Institute has ever been conceived and given full flowering in the Independent telephone field. The institute, in short, is a clearing house of Independent telephone ideas and is an avenue whereby there can be made available good and sufficient advertising material to every member of the industry, and at a price he can ill afford *not* to pay. The plan, I am sure, can and will suc-

(Please turn to page 104)

SURVEY OF RURAL TELEPHONE USERS

By H. W. PIKE
Commonwealth Telephone Co.
Madison, Wis.

EDITOR'S NOTE: *The following paragraphs in italics were presented by Leland Wright of Alexandria, Minn., in introducing Mr. Pike at the Commercial Conference:*

Following the appointment of the 1944 Commercial Committee, J. F. O'Connell, chairman, furnished each member with a series of questions on subjects pertinent to various phases of the telephone business.

From the replies, certain aspects were selected for further study, and those results are being presented here today. Our subject for now is "The Farm Telephone Problem." It requires no case history. We do not need to review it. It's a perennial problem and a headache to most of us. But if we're sick with the rural problem grief, no doubt we want to find a pain killer, a remedy, and eventually a cure. We hope, with your cooperation, to prescribe something definite which will help to clear up some of our rural ailments.

Before introducing our speaker to you I am going to give you some thought provoking ideas.

(1) The field for enlargement of our rural business in the postwar period is limited only by the number of farms. (An FCC commissioner recently stated that "while the total number of telephones was increasing 35 per cent the number of telephones in farms was decreased nearly 40 per cent.)

(2) Dr. Sellu of the University of Minnesota in a lecture on urban sociology quoted from "News Events" for June, 1944, that after the war "processing will be done entirely on the farm due to new inventions and extensions of electrical and telephone communication facilities." This further self sufficiency of the farmer calls for greater need of a telephone.

(3) John Dos Passos, a well known contemporary realist, writes in his most recent book "The State of the Nation" the following passage:

"Your letter gave me an idea of what you men in uniform are thinking about this country. It made me feel the widening of the rift between the man in the service and the civilian. So much of the youth and energy of the country has been committed to these wars that what kind of citizens you people become as you grow up in warfare is going to determine in a very large measure what kind of a country we shall have when the wars are over. People will tell you that individual liberty as our fathers and grandfathers knew it was only possible in a country of constantly expanding frontiers. They'll wag their heads and tell you that now that the Pacific coast is settled the great days are over. It is just not true.

"With each new advance in technology the possibilities of our lives expand at a terrifying rate. The most casual trip through any six of the 48 states will show you that the country has been barely settled yet. The question is whether we have the will and the brains to use the opportunities which the new skills and the new knowledge and the new frontiers are opening up to perfect and develop the institutions of self-government . . ."

For these reasons and many others, we in the telephone business must cure our rural ills pronto. Do we have the courage to ask our subscribers for their frank opinion of us and our service?

Our committee has felt that until we know what the public thinks about us, can we give them adequate telephone service? With that in mind, Harry Pike of Madison, Wis., will now present to you a plea for the gathering of information from which it is hoped some tangible, workable scheme can be developed as a relief for our rural telephone problem.

* * *

THE TENTATIVE suggestions or proposals which have been handed to you are the result of a great deal of discussion which I have had with some of the people in my company, and more recently with Leland Wright, in an attempt to develop means of getting definite information on farm telephone use and opinion.

S. E. WRIGHT, Cleveland, Ohio, National Telephone Supply Co., takes a rest during convention.

At the outset I would like to say that the suggested plan for getting this information should not be burdensome or expensive for any company, for it is my thought that if 100 or 200 companies could each place only 10 or 20 sets of these data sheets, there would be a very fine sample of from 1,000 to 4,000 separate reports. (See questionnaire on these pages.)

If you will pardon a personal reference, my principal work is in the field of rates, and in many rate cases, we have heard testimony from farmers who declared that telephone service was not worth what it cost.

On the other hand, we know that there is little or no loss of rural telephones when rates are increased, so those same farmers surely recognize the importance of their telephone service, but we also know that farm telephone development has not generally kept pace with the increase in the development in local service.

Accordingly, it seems that the problem is to convince the non-users of rural service how important and how useful the telephone can be to them. Also, I am inclined to believe that if we can get a high degree of rural use or saturation, a good many of the rate and service problems will take care of themselves.

I think that we in the telephone business may have some ideas about rural service which are based upon precedent, or habit, or the actions of someone else, but they may not all be true, and in view of the conditions which we will face in the future, it seems appropriate that we should try to get the facts. Accordingly, if we want to learn exactly how the average farmer uses his telephone to advantage, so that we can do a good selling job to non-subscribers, it seems logical to go to farm telephone users to find out.

After reaching this conclusion, however, several problems still appear. In the first place, if a survey of all of the farmers in any particular exchange were made, the information obtained would indicate primarily the conditions in that particular exchange, and might not be entirely applicable to an exchange of a different size, or to an exchange in a different geographical location. Furthermore, we must recognize the fact that a number of farmers

Telephone No. _____

Number of Persons Living on Farm: Adults____; Children under 16 years____.

Total Acreage of Farm_____. Farm is Owned ☐; Rented ☐

Approximate Number of Acres: Cultivated_____; Pasture_____; Woods_____;

_____ _____; _____ _____

Kind of Farm: General ☐; Grain ☐; Stock ☐; Dairy ☐; _____ ☐

Number of Horses_____; Cattle_____; Hogs_____; _____ _____;

_____ _____; _____ _____

Tractor: Yes ☐; No ☐

Electricity: Yes ☐; No ☐

Radio: Yes ☐; No ☐

Miles to Principal Trading Center_____.

Approximate Population of Principal Trading Center_____.

Exhibit A

in any exchange might refuse to furnish the desired information, so that it would be impossible to have a complete survey for a single exchange in any event.

The thoughts which I have just mentioned preceded the preparation of the exhibits which are illustrated in this article.

Our next thought was that instead of attempting to completely survey one or more exchanges it might be much better to get a number of our employes in administrative and supervisory levels to personally ask one or two relatives or friends to furnish the information called for on these exhibits as a personal favor. This plan seemed to have several advantages, for the reason that such a request made to a close relative or friend would probably produce more uniformly honest and frank answers than might be had by getting the opinion of every farm user in an exchange. Also, the wide distribution of relatives and friends of a number of employes would in itself produce replies for a widely scattered number of exchanges, and the replies which would come through this procedure would be more conclusive than the results for a single exchange would be.

After making drafts of the exhibits, it occurred to us that if such a program would be of advantage for a few companies, it could be made much more valuable if a considerable number of telephone companies would each give it a limited amount of effort to produce a large volume of reliable information which would be of value to all of the companies.

With the thought that a number of companies might like to share the results of such a program, I talked with Mr. Wright about it and am now bringing it before you for further discussion.

I say to you frankly that both the form and content of the various questions and data sheets might be enlarged, or reduced, or modified, or that additional questions might be asked, or that some of the present ones might be eliminated. The exhibits do, however, represent the type of information which I now think it would be desirable to have.

Although I have mentioned that my principal interest is in rates, it will be noted that no reference is made to rates on any of the exhibits. This may seem rather strange to you at first, but it is my own belief that rates are a secondary matter if the farmer gets telephone service which is satisfactory to him in all respects; and also, I am inclined to think that any reference to rates might either consciously or unconsciously influence the person supplying the information. The primary purpose is to learn just how the farmer uses his telephone service to advantage in operating his farm, and what his thoughts are about his telephone service.

As a matter of information, I might add that in the plan which we had under consideration for our own use, we drafted a form of letter which could be used by each employe willing to undertake getting information from one or two friends or relatives. We have not attached the draft of such a letter to the exhibits, for this part of it is after all a personal matter. It was our thought, however, that such a letter ought to refer to the fact that the employe asked his relative or friend to furnish this information as a personal favor, and that each farmer who supplied the information should later be furnished with a summary of the data in appreciation of his efforts, and, also, assured that his own information would not be made available to anyone other than in totals with that of other persons.

It will also be noted that the various exhibits do not provide for any identi-

Telephone No. _____

PLEASE ANSWER AS SOON AS RECEIVED, OR AS SOON AFTERWARD AS POSSIBLE

1. Assume that the manager of your exchange came to you and asked if you would be willing to keep this record for one month, and explained that your own information would not be made public other than to combine it with other reports for the purpose of finding out from several representative users just how rural telephone service was most used, such as:
   (a) Number of calls made to calls received,
   (b) number of business calls to social calls,
   (c) the extent to which telephone calls save car trips,
   (d) the use of the telephone for getting information from stores, railroad stations, etc.
   (e) and whether the telephone could be made of more service to you;
   what would you have told the manager?
   Answer: Yes ☐; No ☐.
2. Of the reasons stated in Question 1, which one was most convincing?
   Answer: (a) ☐; (b) ☐; (c) ☐; (d) ☐; (e) ☐.
3. Of the reasons stated in Question 1, which one was least convincing?
   Answer: (a) ☐; (b) ☐; (c) ☐; (d) ☐; (e) ☐.
4. Do you think of any reasons not stated in Question 1 which would be as convincing, or more convincing, than the ones stated? (For example; safety, health, or others you may think of.)
   Answer:
5. How do you regard your telephone? As:
   (a) Practically a necessity;
   (b) very useful and would not want to get along without it;
   (c) fairly useful and would rather have than not have it;
   (d) all right to have, but would be willing to get along without it;
   (e) would just as soon not have a telephone.
   Answer: (a) ☐; (b) ☐; (c) ☐; (d) ☐; (e) ☐.
6. What do you think are the most important things you use your telephone for?
   Answer:

Exhibit B

fication other than a telephone number, and if all of the forms were stapled or pinned together by the employe receiving them, this is all of the identification which would be necessary in order to keep the various forms properly related to each other.

And now just a few brief comments on some of the information requested in the exhibits.

Referring to Exhibit B, question No. 1 is intended to serve two purposes. In the first place, it will show what could reasonably be expected as to the assistance we would get from farmers if any company felt that a survey along this line ought to be tried in one or more of its exchanges. Also, and more important, it makes the opportunity to bring out the opinions and ideas in questions Nos. 2, 3 and 4 which follow question No. 1. Question No. 4 is included in the hope that it may produce some new ideas as to the importance of rural telephone service.

Again by way of stimulating discussion and to raise the question as to just how much we know about what the farmer thinks of our billing practices, I would refer you to questions Nos. 4 and 5 on Exhibit D. Nearly all billing is done on a monthly basis, and I have always assumed that this must be the best way because so many companies do it. Actually, however, there are a great many farmers who get most of their income at one or two periods in the year, and it may be that such farmers would actually appreciate an opportunity to pay for service six months or a year in advance if they had an opportunity to do so.

This point in itself may not seem important, and it is recognized that there are other departments interested

(Please turn to page 105)

RECORD OF TELEPHONE CALLS

Telephone No.- _____ DATE / DAY	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat
OUT GOING CALLS:														
BUSINESS:														
Stores														
Railroad Station														
Buyers: Stock, Grain, etc														
Doctor														
Veterinarian														
Sheriff, Police, etc.														
Fire														
Neighbors														
Information from Central														
Other														
SOCIAL:														
By Adults														
By Children (Under 16)														
INCOMING CALLS:														
BUSINESS:														
Stores														
Buyers: Stock, Grain, etc.														
Neighbors														
Other														
SOCIAL:														
To Adults														
To Children (Under 16)														
Savings from Use of Telephone for Business Calls:														
Hours of time														
Miles of driving														

Exhibit C

Telephone No. _____

PLEASE ANSWER AFTER FILLING OUT RECORD OF CALLS FOR 30 DAYS

1. **Did the record you kept lead you to the conclusion that your telephone is (a) more helpful, (b) about the same, or (c) less helpful than you had believed before you started to keep the record of calls?**
   Answer: (a) ☐; (b) ☐; (c) ☐
2. **Is there any service which you believe your telephone central office could furnish to you that would be helpful or of value to you, but which it does not now furnish?**
   Answer:
3. **Are there any other classifications of calls on the monthly record form which you think would make it easier to use? (For example; machinery dealers, garages, or other arrangements you may think of.)**
   Answer:
4. **How do you pay for your telephone service now?**
   Answer: Monthly ☐; Quarterly ☐; Semi-annually ☐; Annually ☐;
   _____ ☐
5. **If you would prefer to pay some other way, what would you prefer?**
   Answer: Monthly ☐; Quarterly ☐; Semi-annually ☐; Annually ☐;
   _____ ☐
6. **After keeping the record of calls for 30 days, what do you think are the most important uses for your telephone?**
   Answer:
7. **If you were the manager of your telephone exchange, do you think of any other information you would like to have about the use of farm telephones?**
   Answer:

Exhibit D

INDIRECT CHARGES, OVERHEAD COSTS

By RALPH D. HEUSEL
Vice President
Associated Public Utilities Corp.

THE UNIFORM System of Accounts for Telephone Companies generally provides for an account or accounts to which all transactions should be charged or credited. Clearing accounts are provided to accumulate charges which, because of their general nature, cannot be classified, as incurred, direct to particular codes and accounts. The instructions pertaining to the use of the clearing accounts provide that charges so classified shall be distributed equitably.

In addition to determining methods or accounting procedures which will equitably distribute items of a general nature to codes and accounts, we also have the problem of distributing or allocating revenues and expenses by exchange or accounting areas. Many classes of expenditures can readily be distributed to accounts, but some equitable method or practice must be developed or adopted to apportion such costs to exchanges or accounting areas.

In considering the class of charges which are distributed through clearing accounts, various methods may produce equally equitable results. It should be our objective to keep these methods as simple as possible, consistent with sound accounting principles, and to distribute such items so as to obtain an end result that will be acceptable to the commission or authority having jurisdiction.

There are several ways of distributing vehicle and other work equipment expense. Such costs may be distributed as a loading factor on direct labor costs or direct labor hours, as well as being distributed on automobile hours or a mileage basis. If either of the latter two methods are used, an additional record must be maintained by the employes operating motor vehicles, and summaries must be developed to complete the distribution on that basis. It has been my experience that the basis of distributing this class of expense as a loading factor on direct labor costs requires the least amount of clerical work and produces an equitable distribution. When using this method, it is desirable to accumulate costs by types of equipment, such as service trucks, construction trucks, and passenger cars used by supervisory personnel, making separate distribution for each class of equipment and by operating divisions.

"Supply expense," according to instructions, must be cleared by adding to the cost of material and supplies a suitable loading charge which will distribute the total expense equitably. Some of the larger companies may find it desirable to compile studies and check them from time to time to determine percentages which should be added to cost of different classes of material and supplies as they are used. The smaller companies can obtain equitable results by using one percentage factor on all classes of material. Some companies clear supply expense monthly, or as often as they take off financial statements, while others distribute such costs on an annual basis. For the average small company, supply expense can be equitably distributed by using a fixed percentage throughout the year, making necessary adjustments at the end of the year, rather than clearing this account monthly, which would result in the use of different rates of loading each month.

(Left to Right): C. D. MANNING, C. E. BROWN, and R. C. KRUEGER, Chicago, all of Kellogg Switchboard & Supply Co.

Material and supplies are usually work ordered out, priced and distributed when used. However, companies using a substantial volume of small items of material and supplies have found it desirable to account for such items as a group or class of material rather than recording each individual item as used.

The procedure generally followed is to classify all material and supplies, either as exempt or non-exempt items. Non-exempt material, including poles, crossarms, anchors, cable, conduit, telephones and items of a similar nature, which represent the larger percentage of material and supplies used, is charged out to codes and account numbers when used.

Exempt material and supplies include minor items of material used in the construction of telephone plant: Repair parts chargeable to certain maintenance expense accounts, stationery and printing, fuel and other supplies which are properly controlled through material and supplies account.

In accounting for exempt material, it is good practice to maintain subaccounts for each class of exempt material in order to reconcile estimate use with actual use. An equitable distribution of exempt construction material is obtained by charging out such material on the basis of loading the cost of non-exempt material when used. Loading factors for each type of telephone plant construction may be determined by making an analysis of all material used during a representative period, computing the ratio of the cost of exempt material used, as compared with the cost of non-exempt material used, in the construction of telephone plant.

Exempt repair parts, stationery and printing and other supplies may properly be charged out at a flat monthly rate to maintenance and operating expense accounts affected. Accordingly, switchboard repair parts are chargeable to repairs to central office equipment account; instrument repair parts are chargeable to repairs of station equipment; dry cell batteries are chargeable to maintaining transmission power, and stationery and printing and fuel are chargeable to appropriate expense accounts, at a monthly rate which reflect normal usage during a calendar or fiscal year. Charges for all materials and supplies used during the year are adjusted by any differences from the balances reflected on the books for each class of material and supplies which may develop in reconciling the physical inventory of materials and supplies with the book balances.

The monthly write-off basis will reflect average use rather than actual use for the month, but when adjusted for any differences disclosed by a physical inventory, the actual cost of such material and supplies used is reflected in the income statement for the accounting period so adjusted.

The Uniform System of Accounts provides for an engineering expense account and a plant supervision expense account. The former account is used only by companies which main-

tain separate departments for engineering and plant supervision. The smaller companies, which have only one department, will accumulate the expenses through the plant supervision expense account and must then make an equitable distribution of such expenses as between engineering and plant supervision. Whether accumulated separately as engineering expense or as part of plant supervision expense, engineering expense, according to the system of accounts, should be distributed to appropriate accounts, on the basis of service rendered as determined by the time devoted to particular jobs.

The strict interpretation of these instructions would require the personnel of the engineering and plant departments to maintain records of their time and expense, by jobs or estimates, which would require tabulation, pricing, and finally, distribution by plant accounts for each job or estimate. It seems to me that an equally equitable basis of distributing engineering expense is obtained by relating the costs of the engineering department to construction work completed during each accounting year, distributing such engineering expense to plant accounts as the charges are accumulated. A fixed rate could be applied uniformly throughout the accounting year, based on previous years' experiences adjusted to give effect anticipated increases or decreases in engineering expense or volume of construction scheduled.

Plant supervision expense, excluding engineering expenses, should be cleared on the basis of labor supervised. This distribution may be made on the basis of labor hours or labor cost. I believe the use of direct labor cost requires less clerical work and equitably distributes plant supervision expenses, as well as salaries and expense of division and local supervisors, by codes and accounting areas.

House service expense is to be cleared by apportioning the entire expense to the operating expenses and other accounts on the basis of the use made of such property. This account need only be used for localities in which more than one department is located. In the smaller exchanges, where only a central office is maintained, house service expense may be charged direct to the account, central office house service. Where buildings house central offices, commercial offices, plant departments, and/or accounting departments, a distribution of such costs should be based on the space used by each department.

Expenses of a general nature, which are distributed through clearing accounts to codes, and accounts usually may be apportioned on the same basis

MR. and MRS. L. M. BERRY, Dayton, Ohio.

to exchange or accounting areas. There is, however, one additional class of expense which may be distributed, as incurred, to codes and accounts but which cannot be charged direct to exchange or accounting areas. This class includes general office salaries and expenses, other operating expenses, operating taxes and provision for depreciation, as well as certain charges which are distributed to maintenance, traffic and commercial accounts.

In the maintenance expense accounts, as previously stated, I use direct labor cost as the basis for distributing vehicle and other work equipment expense and plant supervision expenses. To distribute exempt switchboard repair materials, I use the number of lines in service; for exempt instrument repair parts, the station basis is used, and to distribute the cost of batteries, the magneto-operated stations are used.

In the traffic and commercial expense accounts, I consider that gross revenue affords an equitable basis for distributing supervision and other expenses of a general nature which must be apportioned to exchanges.

The larger exchanges have a higher average toll revenue per station than the small exchanges, and this results in more calls per station, more toll tickets to bill to subscribers and report to connecting companies, and all related activities are greater. It is, therefore, logical to assume that the results from distributing on a basis of gross revenue is more equitable than would result from distributing such costs on a station basis or a subscriber basis.

The gross revenue basis is also used for distributing general office salaries and expense accounts in preference to a station or other basis, because it is believed to be the most equitable, and it takes into account the higher costs which are incurred in the operation and supervision of larger units.

In distributing other operating expense, several methods are used. Insurance is distributed by three different methods. Cost of fire, windstorm, use and occupancy, and comprehensive insurance coverage, as well as war risk insurance, which is based on insurable values of such plant serving each exchange.

Workman's compensation and public liability premiums are based on payrolls and are properly distributed as direct labor costs. Premiums for excess insurance increasing coverage on casualty insurance policies, are based on gross revenues, and this insurance expense, together with fidelity bond premiums, is apportioned on a gross revenue basis.

Other expenses, including association dues, contributions, and other items of a general nature, may also be distributed to exchanges on a gross revenue basis.

Several methods also must be used to distribute operating taxes equitably by exchanges or accounting areas. Real estate and personal property taxes may be distributed on the basis of values, certified by the taxing authorities, to tax districts within each exchange or accounting area. The amount of tax distributable is determined by applying the local tax rates applicable to the assessed value of property located in each exchange area.

Excise or gross receipts taxes, based on gross revenues, should be distributed on a gross revenue basis. Social security taxes, based on payrolls, should be distributed on the direct labor cost basis. General corporate taxes, including intangible taxes, state corporate or franchise taxes and federal capital stock taxes, in my opinion, are equitably distributed on the basis of gross revenues. State and federal income and excess profits taxes, computed on taxable net earnings, should be distributed to exchanges on the basis of taxable net earnings produced by each exchange.

Provision for depreciation is properly apportioned by applying the individual rates, or a composite rate if the latter is used on a company basis, against depreciable property accounts for each exchange. If continuing property records are not maintained, a company-owned station basis would probably develop reasonably accurate distribution for use in preparing income statements by exchanges for management's use.

Other ways are undoubtedly used to distribute indirect cost and overhead costs by codes and accounts and by accounting areas which produce equally equitable results. Any basis or practice used should be simple, requiring a minimum of clerical work, but the method must meet the test of producing equitable results and be consistent with sound and generally accepted accounting principles.

PAYROLL PRACTICES AND PROCEDURES

By A. G. KIESLING
General Auditor
Commonwealth Telephone Co.

ANY CONSIDERATION of present-day payroll practices and the keeping of payroll records is of common interest to each and every one of us here today. It makes little difference whether you represent a company having 400 employes or 40, the fact remains that you are, by necessity, forced to keep certain common payroll records to meet the requirements of the Social Security Act, the Fair Labor Standards Act, the withholding tax provisions of the Internal Revenue Code, the Walsh-Healey Act, and the War Manpower Commission regulations, all in addition to your own immediate needs in connection with trying to operate a telephone company.

It is imperative that the overall design of present-day methods and activities, formulated as payroll practices and procedures, must include some consideration of postwar requirements. To those who approach these problems with the thought that many of these laws and regulations affecting payroll procedures may be abolished or eased to permit less record keeping, I would like to point out the opposite viewpoint and quote from a few sources which seem to make clear what will be expected of us in the future. A recent article by Lloyd K. Garrison, public representative on the War Labor Board, opened with the following statement, and I quote:

"Our wartime experience in managing labor relations, which dates from the creation of the National War Labor Board on January 12, 1942, has been full of significance for the future and has not yet, by any means, completed its development. During this period, new principles and methods, some of them, hammered out by the War Labor Board on the anvil of hard cases, and others, resulting from the requirements of the Wage Stabilization Program, have been evolved, and many of them are likely to carry over into the postwar world and to influence profoundly the future course of labor relations."

In the annual report of the Wage & Hour Division, which was published by the Department of Labor after the close of their second year of activities, there is a statement concerning the future of the Fair Labor Standards Act which reads as follows:

"By the terms of the Fair Labor Standards Act the administrator is enjoined to report to the Congress recommendations for futher legislation in connection with the act. In view of the situation outlined above and of the fact that it would take a 50-cent minimum wage today to equal the minimum standard of decency which the Congress set back in 1938 with the 40-cent minimum wage, the Administrator feels that studies should be made, on the basis of which he could make recommendations a year hence. The experience to date also indicates a possible necessity for revisions of some of the tolerances and exemptions now contained in the Act in order to carry out the purposes of the act more effectively and, at the same time, to provide the necessary tolerances to permit industry to operate effeciently.

"The administrator believes that such studies should be conducted to provide a sound factual basis for any further legislation in this field in the postwar years."

Perhaps it might be of interest, while we are considering the extent to which both large and small companies are involved in this matter of maintaining adequate payroll records, to note a few statistics which may give us some idea of the scope of the federal investigations. During the year ended June 30, 1943, there was a total of 61,356 establishments inspected by the Wage & Hour Division inspectors, and, of this number, 56,994 were considered to be covered under the Fair Labor Standards Act. Violations were found in nearly three-fourths, and failure to pay the minimum wage or overtime in almost one-half of the total number. Restitution of wages by reason of these inspections amounted to approximately $16,800,000.00, which was ordered to be paid by some 20,000 establishments to almost 390,000 employes. Included in these figures were inspections of 447 communication companies, and, out of this total, there were found 185 communication companies who were in violation of specified provisions of the act.

We have little in the way of information to indicate how far the Bureau of Internal Revenue has gone in reviewing payroll data in connection with income tax deductions. Undoubtedly, the future will bring to light many cases where claims for wage payments, as proper income tax deductions, will be challenged.

Irrespective of the conditions and problems which have come with the keeping of payroll records to meet these controls, it must be acknowledged that there has been made available to everyone who is in an administrative capacity, certain helpful information which was never before available.

Present trends have increased the need for more complete and accurate payroll records, and I would like to take up at this point some of the more important changes, discussing them from the standpoint of record keeping and operating results. Perhaps the most needed record among small companies today is that which concerns the worker's job or work classification.

Any employer who has a number of individuals in his employ, and particularly any employer coming under the Fair Labor Standards Act, should take the time and effort, if he has not already done so, to establish the common work classification in the daily functioning of his organization. Such classifications are technically referred to as job specifications. It is obviously quite impossible to establish fair and equitable wage rates for the various types and grades of work unless some criterion or basis of judgment is established to determine what is really fair and equitable. It is necessary that both employer and employe have something more than a vague, indefinite and variable standard by which they are guided in their relationships with each other. Too often the procedure that is followed is about as effective as that of asking a group of individuals to determine the weight of a score of different physical objects without giving them a scale with which to work.

One of the most common benefits to be derived from such a job classification is that of establishing the status of employes under the Fair Labor Standards Act. Unless the employer has a definite outline of the duties performed by each worker, it has been extremely difficult to convince the National War Labor Board that certain supervisory employes, having responsible positions, can be excluded from coming under the act. We all know that, unless an employe is definitely exempt, time and one-half must be paid for every hour over 40 per week.

Job classifications are especially helpful when it is necessary or desirable to change the rate of pay of an individual due to a change in duties, because of the fact that there has been established a definite basis for determining the nature and extent of such a change. Established classifications will materially assist the processing of a case before the War Labor

Board, and may preclude entirely the need for presenting the case to them for consideration if it conforms with previously established schedules and practices. We have in the telephone industry many positions which require of an employe a dual responsibility. I am thinking of the cashier-chief operator and the combination plant man and local manager. These are positions in any company which must be given thorough consideration in drawing up specifications of the job and relating it to salary schedules.

A second important trend that requires special attention today in our payroll procedure is the increasing number of minors which are employed. Firms which never before found it necessary to meet this problem are now hiring many individuals under 18 years of age. During the last two years, child labor laws, restricting the employment of minors to selected occupations and industries, have been relaxed in many states, and federal laws have, therefore, become more important. Any company subject to the Fair Labor Standards Act and the Public Contracts Act is required to meet these child labor restrictions. Certain exemptions were made for girls of 16 and 17 years of age due to the extreme manpower shortage. However, nothing should be taken for granted when hiring minors, and it is absolutely essential that certificates of age be kept on file and, further, that the hours and shifts worked each day must be accurately recorded.

Another labor condition which requires special attention and may involve some modification of payroll practices in the telephone industry is the employment of learners. While certificates are usually issued authorizing the employment of learners at sub-minimum wage rates, the regional offices of the War Labor Board have checked carefully to determine whether or not employers have complied. It is necessary to keep the exact record of hours worked for each learner because, under the present regulations, the first 320 hours worked may be paid for at the rate of 30 cents per hour, the next 160 hours worked at the rate of 35 cents per hour, and, thereafter, the rate paid must be at least 40 cents per hour.

I would like to mention one more change that has been made during this emergency period which affects the keeping of payroll records. It is the change in the payroll base when determining premiums for Workmen's Compensation and Public Liability Insurance. Depending upon the state laws which govern insurance rates and premiums, in times past, you have used

(Left to Right): A. J. KOHN, Cincinnati, Ohio, Schauer Machine Co.; R. L. HEPNER and W. C. SNYDER, Columbus, Ohio, Buckeye Telephone & Supply Co., and H. N. CASS, Hudson, Ohio.

almost universally your wage payments as they appeared on the payroll record as the base to which was applied the premium rate. Due to the wartime emergency, most firms are paying abnormally large salaries or wages to their employes due to overtime rates of pay. As a result of this condition, practically all state insurance commissions have issued regulations to the effect that any portion of wages paid, which is derived from the application of a surcharge above and in addition to the regular wage rate for hours worked in excess of the standard work week, shall be excluded from the wages used as a basis of premium, provided

E. O. LINK (left) and HAL R. McNAUGHTON of the Indiana Steel & Wire Co., Muncie, Ind.

the employer maintains records which show separately such portion of wages paid. An alternate method was adopted generally by the insurance companies, providing for the elimination of overtime pay from the premium base. The first method provides as follows:

If the employers' books are maintained so as to show separately by employe and by class of work covered under the policy (a) the remuneration earned at regular rates of pay for total hours worked, and (b) extra remuneration earned for services, then the premium shall be based on remuneration specified in (a) and shall exclude (b) extra overtime remuneration.

The second method allows the employer to maintain his books so as to show:

(a) the remuneration earned at regular rates of pay for those hours worked when there is no overtime, and
(b) a separate segregation showing remuneration earned for the overtime hours worked.

The basis of determining the remuneration upon which the premium shall be determined shall include the remuneration paid, irrespective of overtime hours worked, and two-thirds of the remuneration for the overtime period worked.

Without a doubt, it is to the advantage of every telephone company to see that its time rolls are so designed that overtime pay can be determined readily under one of the methods outlined and to exclude the overtime pay, which is considered abnormal from the premium calculation.

Up to this point, I have reviewed only some of the situations and conditions which give rise to the keeping of complete payroll records. It is obvious that the requirements under the Fair Labor Standards Act are perhaps the most important and far reaching with respect to payroll records when we are considering the position of the larger companies.

However, we should not overlook the provisions of the Amended General Order No. 31 of the National War Labor Board in which there is contained certain restrictions on the smaller employers. I am referring to the provisions of Section I, which covers employers of 30 or fewer employes, and which states that any such employer may make individual increases in the wage or salary rates of his employes for particular jobs as a reward for improved quality or quantity of work, if such increases do not exceed 10 cents per straight time hour during any year, and if the total amount expended on such increases during any year does not exceed an average of 5 cents per straight time hour for all employes in the establish-

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ADEQUATE ACCOUNTING RECORDS

By R. H. BUCKLES
Arthur Andersen & Co.
Chicago, Ill.

ADEQUATE accounting records are so necessary to the proper functioning of a business enterprise in our present-day society that it hardly seems necessary to emphasize their importance. However, with all of the special accounting problems that we have today, perhaps it is desirable for us to reflect upon the basic reasons for the existence of accounting records and to re-examine some of our special problems in the light of these underlying reasons.

It is often said that there is just one basic reason for the existence of accounting records. According to this philosophy, all other purposes are secondary to this fundamental reason, which is to furnish management with the data necessary for its administration of an enterprise. Contrary to what may sometimes appear to be the case, accounting records are not maintained for the Bureau of Internal Revenue, the OPA, or, as I have sometimes been told, for the public accountants.

Back in the days when business units were relatively small and our economic system had not reached its present-day complexity, management was the only party interested in accounting records, which were often merely informal memoranda. Much of the essential information was carried in the head of the proprietor. As business units grew in size and complexity, our double entry bookkeeping system was developed to meet the expanding needs of management in the conduct of business affairs. As our society became more complicated and various requirements and restrictions were imposed on business, management became more and more dependent upon its accounting organization to furnish it with the information needed to meet these requirements.

Thus, with the advent of the income tax law, it became necessary to keep certain additional records, not for the tax collector, but for the management's use in determining and proving its tax liability, thereby safeguarding the company's funds.

In addition to all of the needs of competitive business enterprises for adequate accounting records, the utility company has certain further requirements because of its status as a regulated monopoly. In return for the exclusive right to construct and operate property in a given territory, the utility gives up the right to raise or lower, at will, the charges for its services. In order to obtain an increase in rates to compensate for increased costs, the management must be able to present adequate proof of these costs, as well as proof of the amount of the investment in property. On the other hand, such records are often required by management to prove that existing rates are not excessive, or to measure the amount of the excess if this situation exists.

Assuming that the business is capable of earning a reasonable return, it is a responsibility of management to see that the owners of utility property are fairly compensated for the use of their property in public service. This requires adequate records of amounts invested and of revenues and expenses; thus, it is, in last analysis, a management function that requires such records, and not merely a requirement of a regulatory body.

In the case of utilities, there are, of course, some requirements by regulatory bodies and other governmental agencies for the maintenance of specific accounting records. Unfortunately, some utility accountants are prone to look upon each such order as an unnecessary burden upon the accounting department, without giving consideration to the value that such a record may be to the management. When one accepts each of these "burdens" with an open mind and attempts to make them useful to the management, it is often surprising what can be accomplished.

I can think of no better example of this than the continuing unit property record. In the first place, this record was not conceived by the regulatory bodies. Such records were in use by some of the more progressive utility companies for many years before they were made mandatory by regulatory action. Even today, unit property records are in use by many electric and gas utilities operating in states where such records are not required by law. Their usefulness to management has been demonstrated, as indicated by the fact that many industrial companies are now adopting them. Notwithstanding its desirability from the standpoint of management, some companies have looked upon this record as merely an expensive burden to be maintained because of a regulatory requirement, with the result that their records are not designed to render maximum service to the management.

As you know, the continuing unit property record was prescribed for Class A and B telephone companies in the classification of the Federal Communications Commission, effective January 1, 1936. As a result of this, and after several conferences with representatives of the commission, a committee of your association prepared and filed a plan of a continuing property record, which embodies most of the essential features of the records used by some of the larger utility companies but does not require the great volume of detailed record keeping which they undertake. I understand that the commission has just recently approved this plan, and I think your committee should be commended for the good job it has done.

The industry would be benefited if more of the special commission requirements were worked out in the same manner in which this property record plan was worked out. There is, of course, some motive or purpose behind each such commission or other governmental agency requirement. If the various companies, either directly or preferably, through their associations, can recognize this underlying purpose, they will be in a better position to make suggestions for desired modifications. Sometimes the particular forms or records requested are impracticable, but often it is only through a conscientious effort to comply with the order that the industry is able to demonstrate this impracticability.

Inasmuch as the plant account comprises about 90 per cent of a utility's assets, it might be desirable to elaborate upon the usefulness to management of the continuing property record before leaving this subject. You are all familiar with the nature of this record, which might be described briefly as a system of plant accounting in which the cost of property, by units, is a matter of accounting record. All transactions in the utility plant accounts are expressed in terms of units.

As to the specific uses of such a record, undoubtedly the most frequent is in pricing retirements and estimating the cost of proposed additions. With the original cost of plant completely segregated into its various units, the determination of the original, installed cost of routine retirements becomes as simple as pricing withdrawals of sup-

plies from storerooms where adequate perpetual inventories are maintained.

A continuing property record is of particular help in the determination of the proper amount of insurance coverage for different pieces of property and for proof, for insurance or income tax purposes, of losses sustained. The unit record is invaluable in establishing the amount of losses in the case of storm damage which is so prevalent in certain areas.

Many utility companies have been subjected to arbitrary and sometimes discriminatory valuations by taxing authorities. Until recent years, it has been difficult for these companies to prove such discrimination in view of the admitted inaccuracies in such detailed property records as were available. With the irrevocable evidence now furnished by detailed unit records, it has been much easier to obtain satisfactory adjustments of these inequities.

Although reproduction cost is rapidly falling into disfavor as a basis of utility valuation for rate purposes, this trend could quite conceivably be reversed, possibly by legislative action, if our present war spending should result in serious inflation. The perpetual inventory of units in service, furnished by the continuing property record, would eliminate the necessity for expensive field inventories for this purpose, although certain test-checks would, of course, be necessary to establish the accuracy of the record.

Many of you will find, when you have completed your installations, that the unit property record greatly facilitates the preparation of commission reports and other statements requiring summaries of additions and retirements.

These few examples do not by any means exhaust the possibilities for effective use of an adequate continuing property record in carrying out the functions of management. You are all familiar with further requirements for detailed property information within your own company. No one having a modern unit property record would think of going back to the old system of recording additions and retirements only by dollars and classified accounts.

In the case of many companies, however, there is still room for much improvement in this respect. There has been some reluctance to establish adequate property records because of the belief that the continuing cost would prove to be burdensome. This is an erroneous assumption; after the record is once established, there is no practical reason for the total operating cost to be greater than for any other system of recording property additions and retirements, when proper consideration is given to the time saved in pricing retirements and in securing other property data which are constantly in demand. No doubt this phase of our utility accounting will receive further attention on the part of management when manpower conditions makes it practicable.

In this group are N. W. RICE, Ironton, Mo. (center), and C. H. PRICE (left) and WILLIAM C. STREHL, both of Suttle Equipment Co., Lawrenceville, Ill.

With the possible exception of these records pertaining to property and related depreciation reserves, the general records of most utility companies are, for the most part, quite adequate. By general records, I have reference to such records as cashbooks, voucher registers, journals, ledgers and financial statements. I would venture to say that the standards for these records are ordinarily higher among small utility companies than they are among small industrial companies, and I am sure that you are all fully aware of the importance of such records.

Adequate accounting, however, involves something more than a mere recording of receipts, disbursements and other transactions in the general records. It involves, particularly, a record of the *thinking* and the decisions underlying these entries. In my opinion, the greatest deficiency in utility record keeping lies in the failure to record the reasoning behind the various entries in the general records. Often a decision requiring many conferences among the top officers of a company will be explained in the records as "to charge so-and-so to surplus" or "to capitalize the above items." Such journal entries, without reference to further particulars, are quite inadequate. Perhaps a few specific examples will clarify this point.

Recently, in making a review of a company's property accounts in connection with an "original cost" review, a commission accountant found a 1915 voucher charge which required further explanation. The item in question was a payment of $12,000 to a firm of attorneys. There was no explanation of the charge on the voucher other than "for services rendered." Furthermore, there was no indication on the voucher of the account to be charged. Ordinarily, it would be expected that payments for legal services of a going concern would be charged to expense, with the portion, if any, representing construction overhead charges finding its way into the plant accounts through the "overhead" proration of general and administrative charges. But here was a payment for legal services charged directly to property; surely there must be some good reason for this, and the company auditor assured the commission representative that there was. However, a thorough search of the company's records and correspondence files, as well as discussion with older officers and employes, failed to shed any light on the nature of the charge. The officer who had approved the voucher for payment had been dead for 10 years, and the law firm was no longer in existence. The canceled check was located but it was of no help. Clearly, the circumstances were such that the property charge may have been erroneous; the error may have arisen in the extension to the property column rather than the expense column of the voucher register, it may have been an error in posting, or, in the absence of definite instructions, the posting clerk may have thought this was the best way to dispose of the item. In any case, the present officers could not explain the charge and the commission accountant had no alternative, on the evidence available, but to exclude the item from original cost.

Not satisfied to let the matter drop at this point, the auditor for the company decided to make a further attempt to get an explanation from records of the attorneys. Although the firm had been dissolved for several years, he was finally able to locate

some old records in the attic of the home of the widow of one of the deceased partners. After several days' work with these old records, the auditor was able to clear up the "mystery" and to substantiate, to everyone's satisfaction, the propriety of the charge to property. The facts were that the company had decided to build a transmission line, and, not having an adequate legal staff for the job, had employed the attorneys to secure the right-of-way. Records of time spent by employes of the law firm in contacting land owners and county recorders were sufficiently detailed to enable the company to support the explanation of the fee.

This is but one example of a very frequently occurring situation in which a little foresight would have prevented a considerable amount of trouble for the management at a later date. It is little wonder that many executives are now having difficulty in establishing the fact that certain items capitalized 20 or 30 years ago were "prudently invested" when the descriptions of the transactions are so inadequate.

It is no less important today that all vouchers, regardless of the account charged, be properly supported with a full explanation of the charge. The nature of any special services rendered by your attorneys, accountants or consulting engineers should be set forth either on the invoice or on a separate memorandum attached to the voucher, and it is the responsibility of the chief accounting officer to see that this is done.

Each month your records reflect many other types of transactions which, if not properly supported, may rise up to plague you or your successors in later years. For example, you are all acquainted with the fact that under certain circumstances, such as a bona fide promotion or change of responsibilities, you can make a salary adjustment within an established range without specific approval of the Wage & Hour Division of the War Labor Board. You are also aware of the fact that the penalty for improper increases is disallowance of the subsequent salary as a deduction for income tax purposes. A company may have quite legitimate reasons for granting unapproved increases in 1944, but these reasons may not be so apparent when the income tax examiner arrives in 1947 or 1948. Thus, it behooves anyone responsible for the accounting of a corporation to see that a comprehensive file is maintained in support of each salary adjustment made during this period. This record should show that the approved salary scale was referred to, and it should contain a listing of the duties and responsibilities of the employes, both before and after the change in status.

(Left to Right): L. G. ERICKSON, San Francisco, Calif., Lenkurt Electric Co.; R. B. RITTER, Chicago, Ritter Sales Co., and M. P. BROWN, Spartanburg, S. C., Taylor-Colquitt Co.

Another phase of utility accounting in which it is important that adequate records be maintained of the reasoning followed, is the matter of construction overheads. You are all familiar with the section of the Federal Communications Commission classification which states, with respect to overheads, that the instructions shall not be interpreted as permitting the addition to plant accounts of arbitrary percentages or amounts to cover assumed overhead costs, but as requiring the assignment to particular jobs and accounts of actual and necessary overhead expenditures. This same language is to be found in most of the classifications prescribed by various regulatory bodies for other types of utilities.

As you know, overhead rates do not remain constant but, on the contrary, fluctuate quite widely for a number of different reasons. A ratio of overheads to direct costs that remains constant for several years would certainly invite careful scrutiny. It, therefore, becomes necessary for a company to devise a method of capitalizing overheads which recognizes these rapidly changing conditions. Accounting officers for some companies believe that the only way to satisfactorily account for overhead costs is on an actual time-spent basis. I know of at least one large company, for example, in which all of the officers, from the president on down, keep a daily time record which is summarized, by functions, semi-monthly and used as a basis of capitalizing overhead costs. This procedure is best suited, of course, to those larger companies using the functional system of reporting and accumulating accounting data.

These companies will, of course, have the best records in support of overhead charges. Incidentally, it may be of interest to you to know that the experience of these companies during the recent period of relatively low construction has been that their overhead costs run as high as 30 to 40 per cent of direct costs, whereas the rates before the war were from 10 to 15 per cent. These lower rates should, of course, again prevail as soon as normal construction is resumed.

For most of the smaller companies, an actual time basis of determining overhead costs is impractical and, furthermore, unnecessary. The time study basis has been found to be workable, and it satisfactorily meets the objective of a proper allocation of overhead cost between construction and operation. However, if overheads are capitalized on the basis of periodic studies, it is important that these studies be revised frequently to keep abreast of changing conditions. Most important, is that all of the working papers, memoranda and conclusions, supporting these studies, be kept and properly cross-referenced to the journal entries recording overheads.

To the best of my knowledge, the commissions have not yet taken very extensive action toward reviewing current overhead procedures, confining their activities, principally, to reviews of original cost studies and continuing property records. However, there have been some instances of commission scrutiny, one of the most recent being the case of Republic Light Heat & Power Co. before the New York Department of Public Service, State Division. This is a very important decision, and I suggest that all of you read it in connection with your own overhead policies.

The commission disallowed certain general and administrative overheads, which had been capitalized by allocating these costs between construction and operation on the basis of total

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OUR INDUSTRY TODAY, TOMORROW

By C. F. MASON
USITA President

I BELIEVE the time-honored pattern for a president making his retiring address is to give a so-called account of his stewardship, to wish everybody well, especially his successor, and then to disappear as quickly as possible. I am only going to break with this sensible tradition in two particulars: First, I am *not* going to review all the developments of the past year; second, I am certainly not going to take credit for them.

I remember too well Will Rogers' definition of a boaster—"A fellow who every time he opens his mouth, puts his *feats* in." Besides, in this case, they were not my "feats." It would flatter my ego, perhaps, if I could truthfully tell you that one year ago, when I took over the executive job of this association, I found everything a total wreck, and I had to sail in and build it all up again all by myself, so to speak. But truth compels me to say that just the opposite was the case, as all of you well know.

I found in the Washington headquarters of the association a hard-working staff, running smoothly, under control of our full-time executive officer, Clyde S. Bailey. This full-time organization operates under the supervision of, and in harmonious cooperation with, an experienced board of directors. The result of this combination has been a year marked with association success, over which I have been proudly privileged to preside as your president. . . .

So I can't honestly brag about anything I've done myself. I thought you might be interested in some things I learned, or believe I have learned, for myself since I have been on this president's job. It is barely possible that by passing on my reactions to these problems, I can make some contribution to the stockpile of experience from which we shall all have to draw so heavily soon in the future when we must make definite decisions for post-war operation.

One thing that has made a lasting impression on me while I have been in office, is the increasing interest of our membership in these very meetings, such as we are holding in Chicago. It is really astonishing when you come to think of it, that for the last two critical war years, the attendance at these meetings has broken previous records. I get about the same story from the state associations.

This, at the very time when war restrictions have compelled us to streamline programs, to curtail or eliminate altogether entertainment and social features. This, at the very time when we have extra expense and general hardship of travel and difficulty in obtaining accommodations. This, at the very time when the manpower shortage

C. F. MASON

and other multiple problems of routine business make it more difficult than ever for the average telephone man to get away from his business several hours, let alone several days.

Of course, I hasten to add that the excellent program arranged for this meeting, featuring such a distinguished guest speaker as our celebrated colleague, Walter Gifford, president of the American Telephone & Telegraph Co., is tempting enough under any circumstances. But going back to my original thought, I have asked myself what is the reason for this intensified interest in business meetings?

It is simply this: I think that all of us in the telephone industry today instinctively look to these gatherings for guidance. We hope that by collective pooling of our best thoughts, through association action, we can find out answers to questions which, as individuals, we are having difficulty in solving during these critical times. I look forward as much as anyone else to an early return of the days when we can again hold these meetings in a more peaceful atmosphere of good fellowship which will take care, shall I say, of our social inclinations, as well as the strictly business emphasis made necessary by these wartime gatherings. May I say, at the same time, however, that this impressive attendance and interest are an inspirational challenge to, as well as a vote of confidence in, our work as an association.

I am also impressed by the closer relationship and greater degree of cooperation which we have witnessed during these recent war months between the Bell System and the United States Independent telephone industry. We have come a long way, of course, from the differences and bygone quarrels which characterized Bell and Independent relationships of a quarter of a century ago. Even before the outbreak of the present war, I think we all agree that we had learned to live together in peace, as a cooperative industrial brotherhood, with steadily improving understanding of each other's problems and only occasional friendly rivalry in certain areas.

But the war has closed our ranks even more firmly. In the face of a common crisis, requiring intelligent and coordinated action, we have shown the world that American telephony is American first and telephony second. Best evidence of this was the gentlemanly way we worked out, and are still working out, our toll compensation problem under the difficult pressure of the war and other conditions. I know I speak for the overwhelming majority of the Independent telephone industry when I say that I am confident this more friendly and mature atmosphere of Bell-Independent relations will survive this war, and prove helpful in solving our national industrial problems of reconversion and postwar operations.

Understand, I do not say that Bell-Independent problems will not arise in the future. By the very essential and complicated nature of our business, such problems are inevitable. But I do say that we can settle these very problems, quickly and more satisfactorily by continuing the harmonious relations which now prevail, and which reflect our mutual respect for each other and our mutual desire for the welfare of our industry as a whole.

These representatives of the Copperweld Steel Co. are (left to right): A. B. LEACH, Chicago, A. R. TEIFELD, Glassport, Pa., W. W. EGE, Glassport, Pa., and H. OBERLE, New York City.

After all, underneath it all we are both working for the same objectives, and differences in our organization are often more obvious than inherent. . . .

One problem which has become somewhat acute during my term of office, and which involves a number of both Bell and Independent companies, is this attempt to convert payments for federal excess profits taxes into utility rate reductions. I dare say most of you here have read the comprehensive articles in our excellent trade press, which have analyzed the origin and spread of this agitation. The origin, I believe, was in Detroit. But the spread, I happen to know, has reached California.

This idea of plowing back utility tax liability into liability for rate concessions is, I believe, a very dangerous one for our industry. First of all, it is dangerous to our public relations because it puts us in the false position of appearing to make too much money through excessively high rates. Secondly, it is dangerous to our rate structure, because rate cuts once made, on the basis of temporary surplus earning conditions, cannot easily be withdrawn when these conditions change, as they surely will when the war is over.

I am not going to labor the point that it is unfair and misleading to say that excess profits tax liability is of iteself conclusive evidence of excessive rates. Before this so-called Detroit Edison doctrine made its appearance, I don't recall any particular dissatisfaction with the present level of telephone or utility rates generally. On the contrary, I think the public was impressed by the obvious fact that, in the midst of rationing, shortages and skyrocketing prices for virtually every other essential service, the regulated rates of public utilities have remained steady and in many cases are lower than before the war. Furthermore, established utility customers don't need a ration book — or have to stand in line to get service. In other words, while I have heard some housewives complain to OPA about the utility cuts of beef, they have not really been beefing about utility cuts in rates!

The real difficulty, I believe, springs from the unfortunate language in the federal statute which labels a certain abnormal tax liability as "excess profits taxes" when, in fact, they are "war taxes" and ought to be so called.

When the war is over, we have reason to believe that these taxes will be soon removed or tapered off. But we have no guaranty that any short-cut alternative, which might be forced upon us by way of rate cuts or rate rebates, will pass with the war emergency. In short, I think this problem is going to take some careful study, and that it is going to be with us awhile.

In the case of the telephone industry, this situation shows the advantage of working for a sound overall tax policy, both state and federal. This question never would have arisen if these taxes were levied on the customer in the form of excise taxes instead of so-called excess profits taxes. I believe that honesty and plain speaking in the enactment or amendment of future tax legislation is the best hope for defeating these attempts to pervert what was intended to be a federal tax-raising device into a political technique to subsidize local benefits at the expense of federal taxpayers in general.

I note with interest a movement already under foot, headed by Beardsly Ruml, who pioneered our recent pay-as-you go income tax reform, to lighten corporate taxes in such a way that this Detroit Edison doctrine would never be a problem at all. I hope that in the year ahead, progress will be made on this unsolved industrial problem. . . .

I was glad to see, during my term of office, renewed interest in the plight of our smaller telephone companies. Sometimes, when I check back on what our association has done and is doing for its members, I try to segregate those association activities which might be said to help the larger companies, from those which help the smaller companies. Most of our association work is broad enough, of course, to benefit all kinds of member companies—large, small and medium. But I am also glad to say that where such a distinction is possible, our association has labored just as diligently for objectives of primary concern to the small companies as for the larger and, perhaps, more affluent of our supporting members.

No one can truthfully say (and, as far as I know, no one has said) that our association is essentially a "big company association" or a "little company association." It has operated and will continue to operate for all Independent telephone companies, big or little.

(Left to Right): J. S. MURRAY, Automatic Electric Sales Co., Chicago; CARL D. BROREIN, A. W. ANDERS, B. N. DARLINGTON, SIDNEY SMITH and NORMAN M. SHENK, all of Tampa, Fla., and JOHN F. JAAP, JR., Cook Electric Co., Chicago.

But in the period ahead, I believe that we might well be justified in making a special effort for the smaller companies, for the simple reason that they are faced with special problems. Their problems, for example, as in the Detroit Edison agitation I have mentioned, do not have so much to do with paying excess profits taxes or cutting rates, but in getting high enough rates to make any profit at all, above operating expenses—aside from any question of taxes.

Of course, it may be some small con-

solation to these smaller companies that their rates are already so low that they are in little danger of being made the target of rate reduction agitation which bothers our large companies from time to time. After all, you can't fall out of bed when you sleep on the floor! But I think it is part of our job, all of us, to help these little fellows get up from the floor. I am proud of the things our association has accomplished in the past of special help to the small companies.

'Way back in 1934, our association secured the Section 2(b)2 exemption in the Communications Act, which relieves the entire Independent telephone industry, with the exception of less than 100 of the largest companies, from any substantial jurisdiction of the Federal Communications Commission. There was our success in securing the enactment of the exemption of 500-station exchanges from the Wage-Hour Law; our success just this past year in procuring some measure of relief from burdensome accounting requirements. But these are matters which our various committees and officials will report to you in detail. So I am not going to take your time now with any duplicate recital of my own. But I *will* say this: Our association's work to help the small companies is going to go on with even more emphasis. Of that I am confident.

I am not going to pass on any of my advice, or tell the next administration what it should do about this small company question, or any other question, for that matter. But I respectfully submit that we, as an industry, *are* our brother's keeper. We might well paraphrase that beautiful scriptural passage: "Whatever happens unto the least of these, happens also unto us." In plain words, I think we are justified in giving special thought without delay, and taking whatever action is feasible and necessary to help the little companies help themselves.

The biggest industrial problem of the coming year, as I see it, will be reconversion, which our European war successes have already brought into such sharp focus. Actually, of course, there are two problems linked together. First, there is the problem of shifting our operations from war restrictions to peace expansion or rehabilitation. Secondly, there is the personnel problem of giving the returning veteran his proper job, while taking care of workers who stood by us during the storm, and, at the same time, complying with the numerous and changing labor and bargaining requirements of the government.

Included in this first category is the more or less immediate question of absorbing a certain quantity of surplus war goods which may be found to be of some good use in commercial telephone operations. I understand that the responsible authorities in Washington have already made some progress on a plan for handling distribution of these materials in a way that will be fair to the manufacturers and helpful to the operating industry.

In any event, however, solving this question is likely to call for patience and understanding on the part of both the operating and manufacturing industry. I am glad to say that our organization is unique in combining participation of both of these important industrial branches, thereby providing facilities for cooperative councils that might not otherwise exist, and which, as a matter of fact, do not exist in some other parallel industries and are likely to cause a great deal of trouble.

I look to see, in the postwar period, continued labor difficulties as the problem of giving jobs to returning veterans poses a challenge for the leadership of both management and labor groups. There is likely to be, in this situation, a temptation to resort to more and more government spending which, if it is extended far enough, will inevitably tend to channel into fields of direct government operation in public service. We saw a little of that in the WPA and PWA programs to end the depression of the early 30's. Fortunately, it did not then touch our industry directly. We may see more of it, if the postwar employment problem reaches large proportions, and we cannot be altogether sure it will not touch our own industry directly, in some form or other.

Our association's place in this picture, as I see it, is to give continued and effective testimony to the opportunities which lie in the preservation of our great American system of free private enterprise. These include the opportunities of direct bargaining between management and cooperative labor, as compared with the tragic examples of regimented management and regimented labor in totalitarian countries which inevitably resulted in the destruction of both management and labor as independent forces.

I think the American people, generally, are waking up to this dominant truth, which is certainly being underscored enough by our bitter war experience. I am hopeful that the time is coming, in the near future, when the American people will refuse to be bribed with their own money in voting away their own liberties as individuals under the guise of a security that is not secure because it lacks a firm economic foundation.

In closing, I want to say that probably the most gratifying personal experience I have had as president of your organization has been the privilege of presiding over an industry during the very time when it showed its true blue colors in the fierce crucible of the fiery furnace of war. I refer specifically to the tangible evidence of gratitude and recognition which the Chief Signal Officer of the United States Army has so generously bestowed upon the various members of our Independent telephone association, including a number of our state telephone associations. These awards are essentially for giving telephone service above and beyond the call of duty.

The honor roll of these recipients of the certificate of award is too extensive and too well known to you to warrant my repeating at this time. I can only repeat my own feelings with regard to each and every one of these certificate awards, best summed up in the following remarks I made to Col. S. W. Stanley of the Signal corps when I accepted the award as president of the California Independent Telephone Association.

"This thoughtful action on the part of the Signal Corps in certifying our cooperative spirit and effort—is evidence in itself of the splendid 'stuff' of which our armed services are made. We are the ones who should be granting awards to you men and women in uniform. You are sacrificing the comforts and liberties of home—and risking the battle line to bring victory to our nation—and justice and peace to the world."

Telephone Poles

"Every 48 hours, the U. S. Signal Corps uses enough poles to string a single telephone line from New York to Philadelphia—that's at the rate of more than 1,000 a day—377,000 in a year. Most of these telephone poles are required in conquered territory to establish communication lines to the battlefronts. And every one of these poles must be delivered to the Signal Corps from this country. . . ."—Erie Railroad Advertisement.

REPORT FROM USITA HEADQUARTERS

By CLYDE S. BAILEY
USITA Executive Vice President

IT IS A pleasure to me to speak to representatives of companies that make up approximately one-fifth of the total telephone industry in the United States.

The Independent telephone industry, consisting of some 6,400 companies, representing an aggregate investment of upwards of $800,000,000, having annual revenues of about $180,000,000 and employing approximately 75,000 persons, is the smaller part of the total industry. Yet these Independent companies furnish an indispensable service to 12,000 cities and towns compared with 7,000 serviced by the Bell companies, and, in addition, these Independent companies are meeting the communication needs of a large part of the rural area of the country, estimated at times as high as 70 per cent.

During the past few years, our Independent companies, while furnishing telephone service to the civilian population, have, like the Bell System companies, also provided the advantages of communication to myriads of governmental establishments, to manufacturing plants turning out munitions of war in infinite description, and to Army and Navy bases from one end of the nation to the other.

The telephone industry is subject to strict supervision by federal and state commissions. Their rates and charges are regulated by public authority. Because of this circumstance, telephone companies during the current unpleasantness have not hit the war jackpot. But if this is so, it is also true that neither will the industry suffer appreciably from any jolt resulting from the impact of peace when it arrives.

An ancient historian once wrote of the Greeks that they had made gentle the life of the world. It does not take a historian to tell us that the telephone instrument makes more full and more happy the life of the same world. Tribute after tribute has been given to telephone companies for the indispensable part they have played in helping to win the war. Nothing can dim the brilliance of the record of the industry during the crucible from which it appears we might now be emerging.

The war has proved again that in the broad field of telephony, there is no emergency so great and no obstacle so large that it cannot be overcome by telephone management. Apparently there is almost nothing that a team of engineers, scientists and administrators cannot do in the 20th Century. One of the explanations of this, in our branch of activity, is the fact that the spirit of service is a part of the very fiber of those who man the wires, those who are constantly striving for a better and better method of speeding the messages of mankind.

Association Activities

But according to the program, I am supposed to make a report from the association's headquarters . . . Suffice it to say that your association has had an exceedingly busy 12 months. No sooner had the splendid industry journals carried stories about our successful 1943 convention than we were precipitated into a hearing before the Wage-Hour Administrator in the 40-cent wage case and into another hearing involving amendment of the learner regulations. Then there were hearings on tax bills in Congress. . . .

Our committees have responded magnificently to the demands which war has entailed. I, personally, can claim very little credit for any accomplishments we have achieved. The credit goes to your distinguished president, Mr. Mason, and to the able men who serve on your committees. They cannot be thanked too warmly.

On January 1 of this year, we lost our assistant secretary and statistician, Edward N. Janson, through resignation. He was succeeded by Floyd D. Ridings. . . .

In August we lost our engineer, B. C. Burden, to the alluring charms of his Nebraska ranch, his swimming pool and chickens, as well as possibly to other attractions. Although to date we have not appointed a successor, we hope to find a suitable person within the near future.

There would be no point in discussing association activities in detail. Any summary at a time like this at best would be superficial. It could not take account of the many state telephone conventions attended, the extensive traveling done, the tremendous amount of correspondence conducted, the reports written, the multiplicity of long distance telephone conversations held, the intensive studying required, and the large amount of midnight oil burned by your committee members, your officers and employes in discharging their obligation to the industry whose fostering care they have made their life work.

For these reasons, with your permission, I would like to turn to some other things which deserve attention.

Convention Program

First, however, a word about the program which has been arranged for this convention. Your officers believe that an agenda has been prepared that will bring out a maximum of helpful information and advice in a minimum of time. The tempo of the times and the temper of the needs of our industry under the lash of war and a partial transition to peace call for unvarnished words. We hope you will cooperate by bringing out any helpful thoughts that may be sulking in idleness. Those thoughts may prove to be the valuable gems that may illuminate our future path. Let our minds be bold.

In devising the program, particular attention was paid to subjects deemed of interest to the small companies. We are hopeful that those companies will be represented here in large numbers. They are a very, very important part of our Independent industry. More

Best Story of the Week — What's Yours?

A woman subscriber at Vicksburg, Miss., had been using her telephone line on the outside as a clothes line for years. The insulation became worn. One wash day she received a slight shock, and promptly asked the telephone company (the Southern Bell T. & T. Co.) to fix the wire so she could hang out her clothes.

In recording this unusual request, the Southern Telephone News concluded that the manager "would have a hard time finding the answer to this one in his commercial practices."

than 6,000 of our 6,400 companies have revenues of less than $50,000 annually and some 10,000 of our 12,000 exchanges have 500 or less stations. Much of the association's time is therefore properly devoted to efforts to assist the smaller companies in solving their problems. These efforts will continue unabated and, wherever possible, will be increased.

Industry Journals

I would be remiss where remissness is inexcusable if I failed to give a deserved pat on the shoulders to our industry magazines. They, too, have responded in a highly commendable manner to the unprecedented demands made upon them. They have been uniformly cooperative in their relations with your association. They have kept the industry informed, and they have expanded their usefulness during a period when, in common with telephone companies, they were suffering from various vexatious restrictions imposed by the necessities of the war.

Independent Manufacturers

Other parts of the Independent telephone industry that I should not omit mentioning are the manufacturers and suppliers. They, too, are members of our association. They, too, have had their share of wartime responsibility and trials and tribulations. They, too, have met the wartime challenge of production and have come through with colors flying.

A deserved tribute to all manufacturers of communications equipment was recently given by Maj. Gen. Harry C. Ingles, Chief Signal Officer of the Army, when he said:

"Success in fast-moving war is in direct proportion to the efficiency of the communications system. The United States equipment, methods and personnel are the best in the world."

We all have confidence that our manufacturers will keep abreast of developments in the field of electronics to whatever extent they enter into point-to-point communication. We have confidence, too, that following the staking out of our claims in changes in the art, the manufacturers will be prepared to do their part in assisting the operating companies in rendering a communication service in accordance with current improvements.

Some Operating Figures

At this point I would like to refer briefly to the results of operations of 233 Class A and Class B Independent telephone companies during the year 1943. There are 152 Class A and 81 Class B companies.

The number of company-owned telephones operated by Class A and B Independent telephone companies on December 31, 1943, was 2,637,250, an increase of approximately 115,000 for the year. This represents a material increase when we consider the restrictions on the use of critical material, the shortage of telephones and other equipment and the loss of a substantial number of Independent stations acquired by the Bell System.

During the year 1943, 14 companies previously classified as "C" companies were elevated to a "B" status by virtue of having increased their annual gross operating revenues to an amount in excess of $50,000.

Independent telephony's popular "Three Musketeers," MAJ. H. E. BILLINGTON, Dayton, Ohio; W. H. DEAN, Hood River, Ore., and C. E. JOHNSON, Spokane, Wash., went to TELEPHONY's suite for their annual picture. However, one of the Musketeers apparently was lost, as only two, MR. DEAN (left) and MAJOR BILLINGTON showed up. Before this picture was "snapped," they voted to inflict the Musketeer absentee penalty on Mr. Johnston by making him "set up the treats" at their next three meetings. No doubt, that is the reason for the serious expressions on their faces.

(Left to Right): GUSTAV HIRSCH, Columbus, Ohio; MILOW HEIBER, Mansfield, Ohio, and V. V. HERSHEY, Warren, Ohio.

Total assets of Class A and B companies continue to rise. A net increase of $2,280,000 was recorded in 1943 while investment in telephone plant was being reduced by $5,120,000 as a result of Bell acquisition of Independent property. An increase in current assets in the form of liquid cash was mainly responsible for offsetting this reduction in plant values. Total plant investment of the Class A and B companies on December 31, 1943, was $432,734,299.

In 1943 the Class A and B Independent telephone companies reported gross operating revenues totaling approximately $117,000,000, or an increase of $12,800,000 for the year. Of this amount, $3,000,000 was in local service revenues, and $9,800,000 in toll revenues. This large increase in toll revenues was, of course, in the main, due to increased compensation on toll business interchanged with Bell System companies.

Taxes and wage adjustments were the controlling factors in determining the owners' share of increased gross revenue in 1943. The tax collector's direct cut of the net operating revenues was approximately 56 per cent.

The tax collector, in taking his cut, laid claim to $6,900,000 of the $12,800,000 increase. The sum of $19,269,000 was paid out in direct taxes during 1942, while in 1943 this amount soared to $26,182,000.

The increase in operating expenses, other than taxes, required an additional $5,700,000. After payment of these increased expenses and taxes, only $200,000 of the $12,800,000 gross revenue increase remained.

The net amount available for payment of interest and dividends increased approximately $700,000 in 1943 over the amount available for that purpose at the close of 1942. Of this increase, $200,000 came from the net operating income, the balance being made up from certain increases in non-operating income and decreases in non-operating expenses. The total available for interest and dividends amounted to $21,381,915.

As previously stated, operating expenses increased approximately $5,700,000. The largest increase was reflected in traffic expenses, which totaled approximately $3,022,000. Increases in the other operating expense accounts, stated in round figures, were as follows: Maintenance expenses, $761,500; depreciation and amortization expense, $551,700; commercial expense, $441,000, and general and miscellaneous expenses, $915,000.

(Left to Right): L. W. LORD and H. W. B. FARR, Norwich Conn., both of Plastic Wire & Cable Corp., and E. S. GEORGE, Brooklyn, N. Y., Acorn Insulated Wire Co.

I would like to turn from figures and for a few moments get down to cases, a few Supreme Court cases in which decisions have been rendered that are of rather vital interest to us.

The decisions relate to the rather absorbing subject of rate increases made necessary by the rising tide of operating expenses. In three cases decided since last January, the Supreme Court in the clearest language has upheld the arms of the regulatory commissions to act in these matters during the war period.

One, *Davies Warehouse Co.* vs. *OPA*, involved a 15 per cent increase order of the California commission. The court said that a state commission in the regulation of rates could take account of different factors and have different objectives from those which would be controlling with the Federal Price Administrator in the regulation of the prices which were entrusted to his care in the anti-inflation legislation enacted by Congress.

In another case, *OPA* vs. *Washington Gas Light Co.*, the court said that the anti-inflation legislation did not operate to divest the regulatory commissions of their customary rate-making powers in wartime, and that when the OPA intervenes in a rate proceeding before a state commission, it has no greater rights than any other intervener.

And in the third case, *Hudson & Manhattan R. R. Co.* vs. *OPA*, the court, citing as authority the other two cases, reiterated that it did not intend to interfere with the exercise of discretion by regulatory commissions when acting on needed rate increases.

I should not, however, refer to those decisions of the court, upholding the wartime rate increases I have mentioned, without drawing attention to another aspect of this manifested disposition of the court not to interfere with the processes of rate regulatory bodies.

The legal proposition involved is not a one-way street. We learned that in the decision of the court in the *Hope Natural Gas Case* on January 3, 1944, when the court sustained a rate-valuation order of the Federal Power Commission which was made on the basis of "actual legitimate cost." Many students of public utility regulation have decried this particular decision on the ground that it repudiated the old fair-return-on-fair-value rule which we generally speak of as having had its origin in the old landmark case of *Smythe* vs. *Ames*.

In sustaining a valuation made on the basis I have stated, the court asserted that it was not concerned with the process the commission may have used in reaching its determination but was interested solely in the end result, namely, the question whether confiscation existed. In view of the company's favorable financial history and other rosy economic factors to which reference was made in its decision, the court said the company could not complain of the valuation methods employed by the commission.

Thus, in these three rate increase cases and the Hope Natural Gas valuation case, the court upheld the arms of

Attending last week's convention were (left to right): JAS. HOLAN, Cleveland, Ohio, American Coach & Body Co.; R. J. McNUTT and GEORGE NORTHINGTON, both of Columbus, Ohio.

regulatory tribunals. Those cases seem to establish a doctrine of regulatory supremacy. While the disposition of the court not to interfere with rate increase orders or regulating authorities may be helpful to telephone and other utilities in need of revenue as a result of increased costs during wartime, the doctrine of regulatory supremacy given effect in the rate increase cases, and especially in the decision in the Hope Natural Gas case, may rise to plague us in certain very vital respects in the future.

In the meantime, however, the decisions in these rate increase cases should be remembered if you are overcome with any uncertainty as to the power of your regulatory commission to act upon your rate increase application if you find it necessary to file one.

E. KOESTER, Milwaukee, Wis., MacGillis and Gibbs Co. (left), and L. E. ADLER, Dallas, Tex., Southern Electric & Transmission Co.

If I may be pardoned a personal observation, I do not believe that any of you who have heard me discourse at conventions can have any doubt as to where I stand on the question of relationship of government to industry. I have expressed myself in terms that are not uncertain.

I am one of those who believe that we shall witness no relaxation in general public utility regulatory controls at any foreseeable time in the future. I think this will be true, regardless of whether there is a change in the political complexion of our government or not.

Having in mind that we are in a sort of transition during which vast changes may be possible in the relationship of government to industry including utility enterprises, I would like to refer to something I said to you in my first appearance at one of your meetings. It was at your Spring Conference in April, 1941. This is what I said:

"Having long served with the regulating commissions, it is perhaps natural that I should have some understanding of their problems. I could hardly claim validity to my profession of loyalty to your cause if I should disavow so soon a concern for the efficacy of public regulation by the commission method."

(Let me interrupt the quotation from my remarks to you in 1941 to say that my experience on the other side of the fence afforded me an opportunity to learn something about the foibles of regulation and the foibles of the regulatory mind. But at the same time, it also afforded an opportunity to learn that, among the regulatory commissions, you will find as public spirited and as patriotic men, and men who are sincerely interested in making the American system of private enterprise work, as can be found anywhere in the nation.)

"A significant utterance was made recently by the chairman of the Temporary National Economic Committee, Senator O'Mahoney. The senator said:

'We are today faced with the appalling alternative of so adjusting our economic mechanisms as to preserve free, private enterprise and enable it to provide stable employment for the masses; or of seeing big government in one form or another, take over the controls.'

"If this is the situation confronting us, is there not an admonition here that the regulated industries and the regulating commissions should endeavor by mutual collaboration to try to work out common problems . . .?

"This is not to suggest an invitation to public authorities to invade the domain of corporate management. Not at all. There would be no excuse for that. What it does suggest is that public authorities be given an opportunity to become acquainted with your problems and to sympathize with you in them.

"I believe the regulating commissions generally entertain a high opinion of the telephone industry, and that they regard the efficiency of telephone service as something not accidental but the offspring of an enlightened consciousness in telephone executives of their public duty. . . .

"I have lived long enough to know that 'the ability to weigh the effect of events and to judge the future is not a field in which men show the greatest proficiency.' But weighing events with such instruments as are available, must there not be a resurgence of confidence on the part of both commissions and the utilities toward each other, if the 'appalling alternative,' spoken of by Senator O'Mahoney, is to be avoided? The utilities should bear in mind that they are performing essential public services which the law has seen fit to subject to public regulation. The commissions should be made to recognize that they are not the owners of the utilities and that the utilities have technical and managerial problems daily besetting them with which the commissions should not attempt to interfere."

In the postwar era there is bound to be a resurgence of commission activities. With the return of manpower, there will be a pent-up eagerness to embark on investigations of one kind or another.

We shall probably wince from time to time as a result of the workings of what someone lately called "the academic and bureaucratic mind, innocent of the facts of economic life." Telephone companies, as well as other forms of utility enterprise, must be prepared to meet any regulatory or economic sophistry that may be invented by these minds. But at the same time, sight must not be lost of the appalling alternatives of which Senator O'Mahoney spoke if the regulatory administrative machinery now with us is not allowed to function properly in the public interest.

Let us hope that, in the peace years to come, within the tested principles of democracy, within the framework of American institutions, we may continue to provide an unimpeachable telephone service to the American people at reasonable rates, while at the same time, enjoying the benefits of private enterprise.

FCC Radio Allocation

. . . . I think I ought to refer for a moment to a proceeding now in progress before the Federal Communication Commission, the outcome of which may have a material bearing on the operations of telephone companies in the years to come.

I refer to Docket No. 6651, the Postwar Radio Frequency Allocation Case. This is a proceeding instituted by the commission in August for the purpose of acquiring information to assist it in determining its postwar radio frequency allocation policies, and in making recommendations to the State Department for international radio agreements, as well as in advising Congress.

It has been recognized by the leaders of the telephone industry that we must, wherever possible, stake our claims in the electronic field in order to furnish communication service by any improved means that may become available. While it is not anticipated that we shall, at any reasonable time in the future, witness the displacement to any large extent of telephone wire circuits, technical progress in recent years may make the use of radio channels in the communication field more feasible. Opportunities for the use of radio lie especially in serving the rural subscriber who is hard to reach with strung wire, owing to natural hazards and difficult terrain. There are, of course, other possible uses but they cannot be discussed at this time in detail.

Your association will be represented at the FCC hearing and a request will be made for the assignment of suitable frequencies and channels to the telephone industry. Hearings began on September 28, are still in progress, and will run several weeks yet.

And finally a word about the future of your association.

The accomplishments of the national association over the past 10 years have been many. Reference could be made to the Section (2) (b) (2) amendment of the Communications Act exempting from the jurisdiction of the FCC all but about 90 of our Independent telephone companies; we could point to the wage-hour amendment, exempting 10,000 of our 12,000 exchanges from the burdensome provisions of the Fair Labor Standards Act; we could point to adjustments made in toll compensation, as well as to other blessings of the highest importance. But the needs of the day make it impossible to live off of the accomplishments of the past. We have got to go on.

Your association has always been solicitous of the interests of the smaller companies in the industry. If I know anything about it, the association will continue to exercise the same degree of care in the years to come. But it must be borne in mind that no company, large or small, wants the association to run it. The companies are not the instrument of the association. Rather, the association is the instrument of the companies. Your association cannot, in the very nature of things, provide accounting or engineering or financial or managerial services to 6,400 companies, or even to any fraction of them. To do that would require an enormous organization and an army of experts, for the defrayment of whose salaries and support there is no money in sight. To the extent that individual service can be provided, it must be done closer to the local company than the national association is now organized for, or is likely to be organized for at any foreseeable time.

The national association must, in the nature of things, concentrate on the broader aspects of our common problem, the national aspects, if you please. In that field, the association has been singularly successful and effective in the past. In the same field your association must keep itself properly geared up in order to acquit its obligation to all companies in the Independent telephone industry, regardless of size, in the future. This, I am sure the association, with your cooperation, will do.

>> A sailor could not remember the telephone number of his girl friend. He remembered only the exchange, but recalled that she had told him the number was the same as the year in which Patrick Henry delivered his famous "Give me liberty or give me death" speech.

"That's it—1775!" he exclaimed, after consulting a history book.

ADVERTISING COMMITTEE REPORT

By R. A. PHILLIPS
Chairman
USITA Advertising Committee

AT THE TIME your Advertising Committee was appointed, the question that was proposed for its consideration was as follows: Can the USITA assist its members and the Independent telephone industry in procuring suitable advertising and publicity ideas and materials at a reasonable cost? If so, how?

In our report to the Spring Conference during April of this year, we outlined in complete detail a suggested plan whereby the advertising and publicity needs of the Independent telephone industry could be economically served through the creation of the *Telephone Advertising Institute.*

In order that the plan be successful and the Institute be in a position to render a comprehensive publicity service, it was recommended that at least 700 Independent telephone exchanges, serving over 500 stations, should be obtained as subscribers to the Institute before the service was actually commenced. We are mighty happy to report today that 712 Independent telephone exchanges in this category are now subscribers to the institute's services, and consequently the plan is in actual operation.

It will be the endeavor of the institute to keep its services in tune with the times and the current problems of our industry. While it is necessary today to explain shortages, it is entirely possible that tomorrow we will be selling more service, or perhaps be justifying upward revisions of our service rates. You will be interested to know that a sizable group of representatives from our industry have been invited to serve as a Copy Clinic Group to assist the *institute* in keeping abreast of our business at all times. Meetings will be scheduled periodically at convenient points and invitations issued to the members of this copy group to attend. It is hoped that enough of the group will be able to attend each time so that a complete discussion of the industry's advertising needs and requirements can be had with the individuals responsible for the operations of the institute.

Instead of further reviewing the details of the institute plan, and in view of the fact that the institute has representatives and a complete display of the type of materials that their service includes available at this series of meetings, it seems desirable at this time to consider the broader aspects of the subject of advertising.

Being fully aware that there had been previous unsuccessful efforts to obtain sufficient participation in a centralized advertising and publicity service to permit of a worthwhile and complete program, your committee approached this assignment with considerable temerity. We were aware of

R. A. PHILLIPS

indications that a great number of Independent telephone people considered advertising as merely "just another way to spend money." A part of our industry seemed to feel that advertising was all right for those selling toothpaste, or hair tonic, but that as far as our business was concerned an occasional ad in the daily or weekly newspaper was all the advertising and publicity needed.

The operating reports of Independent companies reflects this attitude. We find a business with an investment in excess of $750,000,000 and gross revenues exceeding $160,000,000, spending an almost negligible sum for advertising or other types of publicity. This, then, is one attitude in regard to telephone company advertising, an attitude represented by an occasional and hurriedly prepared ad in the weekly or daily newspaper; a "thank-you" ad at Christmas time or a donation to the high school class year book—a view that advertising has as its objective that of satisfying the newspaper man himself or to occasionally sell an additional telephone. Advertising should be viewed in a much broader sense. Advertising should mean a well-planned and consistent publicity program so designed as to convince the public of the values of telephone service and create a sympathetic understanding of the principal problems incident to furnishing such service. Viewed in this light, advertising goes far and beyond the personal pleasure or displeasure of the newspaperman or the mere endeavor of selling additional service.

The war period that we are going through should be convincing enough that this broader view is a proper and worthy conception of advertising. We have lately been forced to practice an economy of scarcity. We just haven't had enough service to go around. It has been necessary to tell the public about this scarcity and explain the reasons for it. This has had nothing to do with selling an additional telephone or pleasing a newspaperman, and yet, never before have we found a greater need for the use of advertising and worthwhile publicity.

The value of having the understanding of the public has been amply demonstrated during this period. We have experienced a far less number of complaints in regard to our service than we did prior to the war. The war itself has created a sympathetic understanding of our problem on the part of those we serve. Will our subscribers always be so patient and understanding? Any representative of the telephone industry who feels that advertising has no place in our business certainly must believe that we do not have any problems, the solution of which will require the sympathy and understanding of the telephone subscriber.

We do have our problems, we will continue to have them, and it might be well to consider some of those that the *Telephone Advertising Institute* may be instrumental in helping to solve.

One problem that is inherent in our business is brought about by the fact that telephony is highly technical. The laymen can see nothing simple in the mechanics and equipment required to complete telephone conversations. Have you ever had the privilege of taking a subscriber through the traffic department of a telephone exchange where there are several girls working at a busy switchboard, each girl handling perhaps as many as 250 local calls per

hour? Invariably when one of our customers has had this experience, they come away with a little better understanding of our business and some of its problems. It is hardly feasible to take all of our subscribers or prospective subscribers through our plants. Consistent and worthwhile advertising and publicity can be substituted for such effort and can help bring about a better appreciation on the part of the public for the telephone company and its problems. *Telephone Advertising Institute* can help interpret your very technical business in a manner the layman is better able to understand.

During the past three years we have had the most rapid station growth ever experienced in the history of the telephone business. A substantial increase in operating revenues has been incident to this station growth. An examination of the operating statements of Class A Independent telephone companies, which operate about one-half of the Independent telephones in the United States, indicates that Independent exchanges have at least $40,000,000 more annual revenues now than was available to them in the prewar year of 1940. Forty million dollars more income per year. Our operating expenses have materially increased since 1940 and there has been a floor established below which certain expenses cannot be reduced. The desirability and necessity of maintaining and holding as much of our present revenues is academic. Will we be able to hold them?

In a recent questionnaire circulated among Independent telephone companies by the USITA Postwar Plans Committee, the question was asked as to whether or not they expect a loss or gain in stations after the war. A very high percentage of the companies making reply indicated that they believe there would be a loss in stations. Many believe that as much as 25 to 50 per cent of the stations added during the war will be removed when we again have peace. This sounds as if we will have a real job on our hands in holding our present revenues.

While our customers have greater savings than at any time in previous history, they also have the greatest pent-up needs and demands for all kinds of services and products. We will meet very active competition for the customer's dollar. Millions of new autos, refrigerators, stoves, radios and many other items will be purchased. All of these items will provide active competition for the same kind of dollars that are required to pay telephone bills. There never was a time when our subscribers were more convinced that our service was worth every dollar they pay for it, but they will need to be continually reminded of the value they receive if we are to maintain anything like our present revenues. If we seriously want to avoid drastic shrinkage in gross income, it will require aggressive selling plans. The services of the *Telephone Advertising Institute* can furnish a solid foundation for such plans.

(Left to Right): J. L. BROWNE, Port Jervis, N. Y.; F. H. MARSTERS and J. W. PUSEY, both of Erie, Pa., and WILKINS LINHART, Leesburg, Fla.

A great deal has been written and said in regard to the problems incident to the operation of the very small telephone exchange. A corollary to this problem is the fact that many farms of the nation are still without telephone service. Here is a challenge that should be of interest and concern to every one connected with the telephone business. Before the telephone requirements of all small exchange subscribers and all farmers can be satisfied, considerable additions to and improvements of the equipment now used in rendering such service will be required. Recently Commissioner Durr of the Federal Communications Commission said, "While the total number of telephones was increasing 35 per cent, the number of telephones on farms was decreased 40 per cent. Three out of four farms . . . are without telephone service of any kind today. What shall we do about these stranded people of ours?"

A staff member of a public utility commission recently advanced the thought that it was entirely possible the small telephone exchange and rural telephone service problem required some form of government financing.

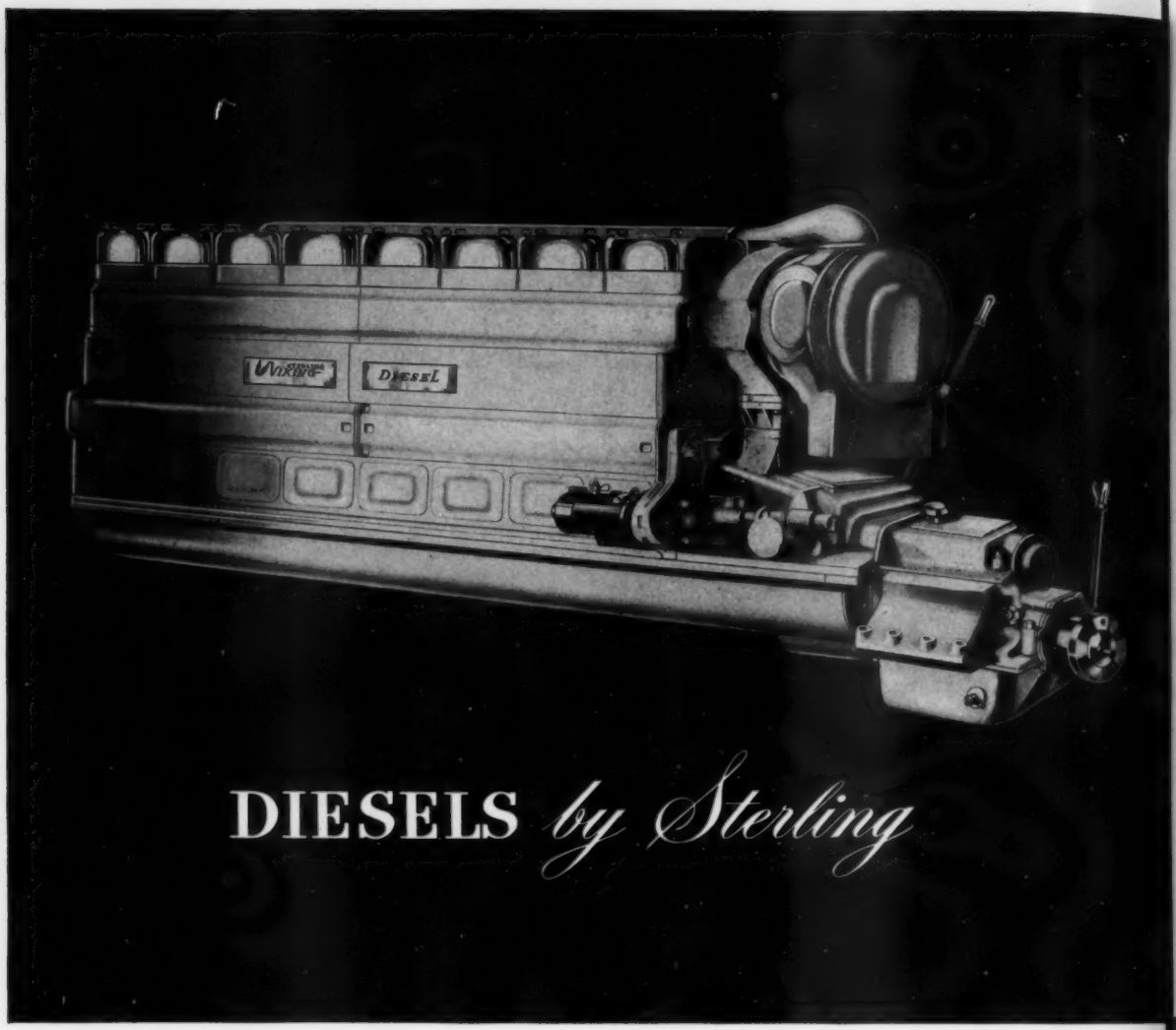
Lowell Mellett, a newspaper columnist, whose writings reach a large circulation, in an article, entitled "Telephones for Farmers," has said: "In the matter of rural telephones, this country has been steadily slipping for more than 20 years. Surely something can be done and maybe REA has shown the way. The problem of rural telephones can be solved. A half century ago the government made a radical departure in postal services by introducing rural free delivery. Ten years ago it moved in to meet the farmer's need for electricity. The same probably would be true if the government were to lend a hand toward ending the farmers' telephonic isolation."

I well recall the advent of the government-financed Rural Electrification Administration. I am of the opinion that most progressive electric industry managements today recognize that, had the private electric companies taken a more aggressive attitude toward providing electric service to the farmers, there would have been no need for such a federal agency as the REA.

There may well be differences of opinion within our own industry as to the advisability of a government-financed program to put a telephone in every village home and one on every farm. We can all agree, however, that if the American people are convinced that more and improved telephone service is required for our well-being, such service will be provided by one means or another. In any such consideration, our industry has a very definite stake and interest. We will have views as to the soundest approach to the problem, and it is here again that we will need a good vehicle of expression for our ideas and wishes and the reasons for them. We will have a story to tell those most affected—the subscribers we serve and the subscribers that wish to be served. How better can we do it than through local use of well prepared, intelligent and persuasive publicity?

We have touched on only a few of the matters in which good advertising and other publicity can play an important role by telling about our side of the business. Our technical business can be made more understandable, the use of our service can be expanded to our benefit, and a vehicle for presenting our views is available by use of the services of the *Telephone Advertising Institute*. Why, every time a subscriber leaves a receiver off the hook, every time a subscriber gets a wrong number, every time we have a severe storm, an occasion is presented illustrating the need for our having public understanding. We would not think of leaving thousands of dollars of central office equipment unprotected to save the cost of a few fuses. The cost of local

(Please turn to page 110)



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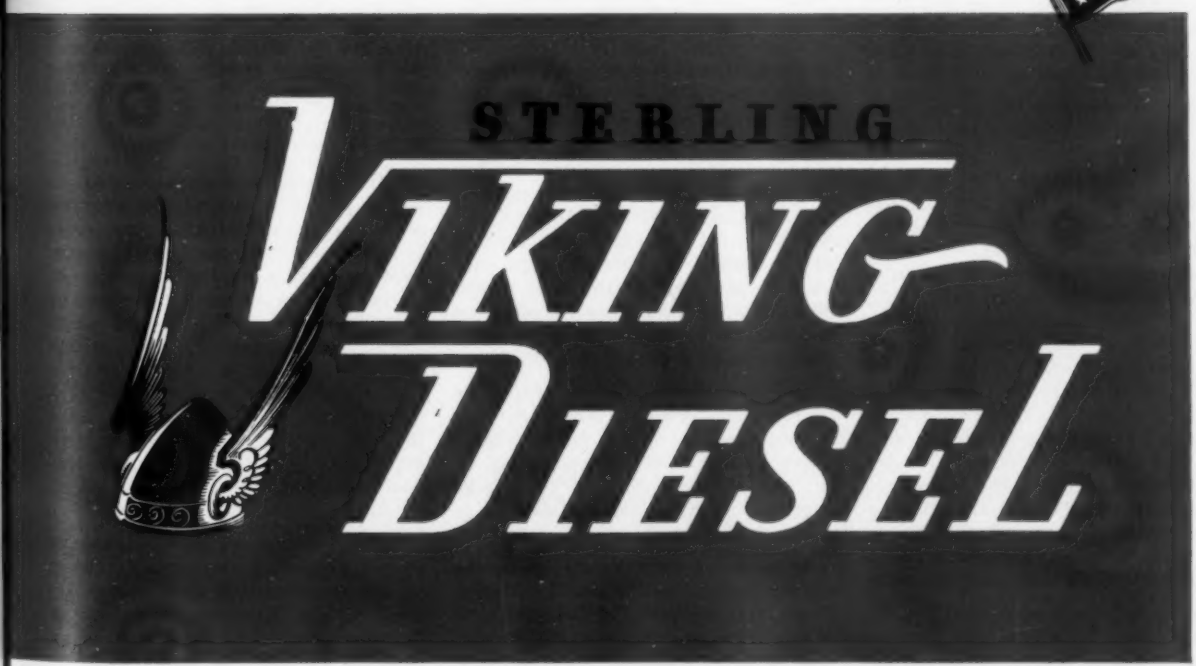
	6 CYLINDER *Unsupercharged*	6 CYLINDER *Supercharged*	8 CYLINDER *Unsupercharged*	8 CYLINDER *Supercharged*
CONTINUOUS	275 HP @ 1000 RPM	410 HP @ 1000 RPM	365 HP @ 1000 RPM	550 HP @ 1000 RPM
INTERMITTENT	325 HP @ 1200 RPM	495 HP @ 1200 RPM	440 HP @ 1200 RPM	650 HP @ 1200 RPM
WEIGHT WITH REVERSE GEAR	8,000 pounds	8,500 pounds	10,000 pounds	10,500 pounds
WEIGHT WITH REVERSE AND REDUCTION GEAR	10,000 pounds	10,500 pounds	12,000 pounds	12,500 pounds

ENGINE CONSTRUCTION

Cylinder Block: Cast iron enbloc construction. Removable cylinder liners. *Crankshaft:* Counterbalanced 6″ main journals and 5″ crankpins. Crankshaft drilled for full pressure lubrication. *Connecting Rods:* Forged steel, rifle drilled for pressure lubrication to piston pin. *Camshaft:* Located in cylinder block. Removable from side of engine. *Bearings:* Main bearings, connecting rod bearings and camshaft bearings are precision type steel backed. *Pistons:* Cast aluminum alloy, provided with six rings and full floating piston pin. *Valve Mechanism:* Dual intake and exhaust valves actuated by hydraulic lifters through push rods and rocker arms. *Timing Gears:* Helical gears located at forward end of engine. *Reverse Gear:* Bevel planetary type, manual or remote control. Thrust bearing located in after end of reverse gear housing. *Lubrication:* Pressure lubrication to all moving parts. Dry sump. Separate gear driven positive displacement pressure and scavenge pumps. *Cooling System:* Fresh water cooling. Separate gear driven self-priming centrifugal fresh water and sea water pumps. *Fuel Injection System:* Individual cam operated pumps. Nozzles located in center of cylinder heads. Fuel transfer pump gear driven positive displacement. *Supercharger:* Exhaust driven, located at after end of engine. Water-jacketed exhaust manifold. *Governor:* Hydraulic variable speed. Provision is made for remote control. *Starting System:* Two electric starting motors. Gear driven generator for battery charging. *Tachometer and Revolution Counter:* Gear driven electric tachometer and mechanical revolution counter.

"KEEP BUYING WAR BONDS"



WAGE TRENDS—EFFECT ON INDUSTRY

By J. H. AGEE
Chairman
Employment Relations Committee

IN MAKING the annual report covering the principal activities of the Employment Relations Committee, it has seemed not inappropriate to discuss briefly the situation existing with reference to wages and hours which affect so directly the rendering of telephone service. We refer to the many rules and regulations arising from the administration of such laws as the National Labor Relations Act, The Fair Labor Standards Act, etc. Unless materially modified, these laws will continue to present many serious problems for management in years to come.

I do not apologize for raising some questions and suggesting some remedies at this time merely because we are confronted with a most important national election. Rather, I am persuaded that, regardless of politics, regardless of party preference, and regardless of the outcome of the election, the time is here for industry to insist upon a sane, sensible course in the matter of regulation of wages and hours.

Of equal importance is the necessity for a modification of such laws as the National Labor Relations Act, as well as a sensible approach to the question of taxation.

Recently some of the political leaders have announced that as soon as Germany surrenders, many of the drastic regulations required by the Wage Stabilization Act and imposed by the decisions of the National War Labor Board will be repealed.

From Washington comes the statement that the new cry within government is "Turn business loose." This statement says that they *say* that, but actually what they mean is "Turn business *half* loose." If we could be assured that we would be relieved of 50 per cent of the present burdens, we might, on the old theory that half a loaf is better than none, agree that it would be a "consummation devoutly to be wished," but if we are to lift the crown of thorns from the brow of industry, there must be an honest recognition of the injustice and unfairness of many of the present rules and regulations as well as the inequalities which exist today by reason of the administration of many of these social reform laws which have been passed by an ardent New Deal administration.

Let us look for a moment at the National Labor Relations Act without taking time to discuss its unfairness which is well known and has been often repeated. The basic right of labor to organize and provide for collective bargaining will undoubtedly be continued. With that we have no quarrel, but the National Labor Relations Act most certainly should be promptly amended to give the employer equal privileges with the employe. That is the meat in the coconut as far as the amendment to that law is concerned.

J. H. AGEE

The Fair Labor Standards Act needs more specific attention. Probably the greatest need for industry as a whole, is a provision providing a specific period of time beyond which no actions to recover wages for violations of the act may be instituted. In other words, the act needs a period of limitation.

Our committee, after a conference with Administrator Walling, has agreed that we would not oppose a two-year statute of limitations and, on his part, he has promised us that he would cooperate in asking Congress to provide this protection.

In a recent case, Bright vs. Hobbs et al, decided in the U. S. District Court for the state of Maryland, in which there are two statutes governing filing of suits — one providing a three-year period for filing suits on simple contracts and the other a 12-year period for filing suits on special acts—the court held that the 12-year statute would apply on the theory that the Fair Labor Standards Act, which was the basis of the suit, was a special act of Congress and, containing no period of limitations, would be governed by the 12-year statute of Maryland. The following language from the opinion of the court in that case is of interest. The court says:

"We are informed that there is now pending in Congress a bill to provide a uniform period of limitations under the Fair Labor Standards Act, but up to the present time Congress has seen fit to leave this matter up to the various states, unfortunate as this is, because uniformity in a matter of this kind, especially where the state statutes vary so greatly, is highly desirable.

"Also it is obvious that, generally speaking, 12 years is far too lengthy a period to allow for the bringing of suits for wages, although this court cannot blink the fact that in the present case it is unnecessary to go beyond the fact of the pleadings to see that the plaintiff worked for wages far below normal standards, regardless of the elevated standards of the Fair Labor Standards Act.

"A number of states have enacted statutes expressly applying to wage and hour claims. Some have recently enacted legislation reducing the time within which actions for back wages may be instituted. However, although the Fair Labor Standards Act has been in effect since 1938, at no session since then has the Maryland legislature seen fit to make any change in the existing state limitations law. Therefore, until Congress or the state acts, the 12-year period must govern suits in Maryland such as the present one."

After a statute of limitations is obtained, the next subject for attention should be a clarification of interpretative bulletins and regulations heretofore promulgated by the administrator. Of prime importance is a revocation by the administrator of his definition of "switchboard operator." This definition was issued during the regime of General Fleming and provided that if a switchboard operator devoted more than 20 per cent of her time to work other than attendance at the switchboard, she would not be considered an exempt employe.

When information first reached us of this regulation, we consulted many of our members and also representatives of the American Telephone & Telegraph Co. asking them whether, as a matter of fact, the switchboard op-

erators in exchanges with less than 500 stations actually devoted as much as 20 per cent of their time to work aside from their attendance at the switchboard. Many of our members made a study of the commercial work in their smaller exchanges. The reports indicated that actually from 10 to 12 per cent in the average small office would cover the amount of time which the operator devoted to work other than attendance at the switchboard.

It was my opinion, which I submitted in writing to members of our committee and to various officials of the association, that the law itself did not give the administrator the right to make an arbitrary definition of that kind.

I called attention to the fact that when Congress desired the administrator to define any terms or classifications of employes, such authority was specifically provided in the law, but when the amendment to the Fair Labor Standards Act was passed by Congress in 1939, it contained no such authorization. That amendment, with which you all should be familiar reads as follows: *"Or (11) any switchboard operator employed in a public telephone exchange which has less than 500 stations."*

By what right, then, does the administrator say that if the switchboard operator devotes more than 20 per cent of her time to work other than attendance at the switchboard, she is no longer a switchboard operator.

For two or three years the administrator's regulation appeared to do no harm to the industry, but with the increase in volume of calls resulting from the war and the necessity for more attention to recording, billing, and collecting, it became apparent that the application of the 20 per cent rule might result, in many small exchanges, in a reclassification of switchboard operators. In other words, if the operator found it necessary to devote 25 per cent of her time to recording toll calls, making out customers' bills, and similar work, she would no longer be an exempt employe.

The increased cost of wages for minimum straight-time pay and time and one-half for overtime becomes a serious problem in many small telephone exchanges, where revenues, in spite of the wartime business, are too small to permit the increased cost of wages.

Your committee presented this problem to the administrator last spring and arranged a conference with him in Washington on July 20. This conference was attended by Clyde S. Bailey, S. A. Lane, president of the Arkansas Telephone Association, Warren B. Clay, president of the Minnesota Telephone Association, J. C. Crowley, secretary of the Minnesota Telephone Association, and myself. Mr. McComb, one of the assistants of the administrator, participated in the conference.

(Left to Right): R. H. BARGER, Rochester, N. Y., Stromberg-Carlson Co.; HORACE CAMPBELL, Chicago, Electric Storage Battery Co., and PETE WINEMILLER, Dallas, Tex., Stromberg-Carlson Co.

In discussing this 20 per cent definition we felt justified in directing attention to the decision of the U. S. Supreme Court rendered on June 5, 1944, in the case of Addison vs. Holly Hill Fruit Products Co., Inc.... Briefly, this decision arose from the fact that, while the Fair Labor Standards Act specifically gives the administrator the right to define area of production in determining those employes of citrus processing companies who would be exempt from the act, the administrator had not only defined "area" geographically, but had continued by excluding all employes in that area of any concern which employed more than seven people.

The Holly Hill Fruit Co., employing more than 200 employes at certain seasons of the year, attacked the validity of the administrator's order, asserting that in limiting the exemption within the area of production by applying it only to employers with less than seven employes, he had exceeded his authority. The U. S. Supreme Court agreed with the Holly Hill Fruit Co. The decision (by Mr. Justice Frankfurter) is a lengthy one but the following statement covers the fundamental issue:

"When Congress granted exemptions for certain workers within the 'area of production (as defined by the administrator),' it restricted administrator to the drawing of geographic lines, although he may take into account all relevant economic factors in the choice of areas open to him."

Mr. Walling stated that he had not considered that decision as having any bearing on our contention, but said he would ask his legal department for its opinion in the matter.

He asked us to furnish him with a statement of what the Independent telephone people, as a rule, had considered the duties of a switchboard operator in small exchanges.

Without desiring to be bound by the statement, Mr. Walling said that it appeared to him that, if, throughout the years when we employed a switchboard operator in an exchange with less than 500 stations, we defined her duties as not only consisting of direct attendance at the switchboard, but also the making out of customers' bills and taking in of money across the counter in payment of bills, the reporting of service complaints and other minor duties incidental to the operation of the small exchange, he was inclined to think that those duties might properly be considered part of the work of a switchboard operator.

Another decision supporting our contention in this matter was rendered on September 6, 1944, in the U. S. District Court, Southern District of New York, reported in Vol. 7 WHR 914, in the case of Arnesen et al vs. Manhattan Lighterage Corp.; Johnson et al vs. Same. This was an action brought under The Fair Labor Standards Act for overtime compensation and liquidated damages, based, however, upon the administrator's Interpretative Bulletin No. 11.

The plaintiffs were employed on barges or lighters operating in the harbor of New York City. The Fair Labor Standards Act exempts seamen from Sections 6 and 7, minimum wages and maximum hours, of the act, but the administrator, in Interpretative Bulletin No. 11, endeavors to define seamen in such a way that the men employed on lighters and barges in harbor work would not be exempt. The court held

that the interpretative bulletin, so far as it attempted to limit the definition of a seaman, was invalid.

The following language of the court seems to follow the reasoning of the Holly Hill Fruit case:

"It would, therefore, seem that the principle of narrowly construing a statutory exemption from the coverage of legislation, social and remedial in nature, is not to be applied where such a construction would distort the common meaning of the words, and where narrowly construing the term might deprive those intended to be excluded from other benefits more favorable to the class as a whole.

"The administrator's wage and hour interpretative bulletins, are such a restrictive interpretation. They would deny the plaintiffs the status of seamen because of some collateral work and would in effect reverse the judicial trend to afford more workers the favored position held by seamen under maritime legislation and as wards of the court. Such a restrictive construction has been disapproved by the courts. Gale et al vs. Union Bag & Paper Co. (5 Cir., 1940), 116 F.2d 27, cert. den. (1941) 313 U. S. 759; Balan vs. Bay State Dredging & Contracting Co. (D.C. Mass., 1942), 48 F. Supp. 266."

The next item of importance is to clarify Interpretative Bulletin No. 13 with reference to sleeping time of operators. I shall not devote many words to this because I think the administrator feels that allowance for sleeping time should depend upon a substantial amount of uninterrupted sleeping time and I believe Mr. Walling is willing to clarify a statement now appearing in Interpretative Bulletin No. 13 so that every telephone manager can definitely determine the amount of sleeping time which need not be considered work time.

It is generally conceded that the war has produced a large volume of night calls which did not exist prior to the war and probably will disappear with the termination of the war, but during the war period if the night operator is deprived of sleep because of these night calls she should be paid for the night work without deduction for sleeping time.

There are other differences which need clarifying and probably liberalizing. The definition of *executive, administrative,* and *professional employes* is one. We do not have time, in this short paper, to discuss the War Labor Board which operates under Executive Order 9240, nor the rules and regulations laid down by Wage Stabilization Director Judge Byrnes, but here again we are being annoyed and possibly penalized by the War Labor Board and the Bureau of Internal Revenue, which apply the regulations issued by the Wage & Hour Division of the Department of Labor and by Judge Byrnes and resolves all doubts in ordering overtime payment for executive or administrative employes in favor of the employe. As a matter of principle, that is probably correct, but the denfiitions for administrative and executive employes should be so clear that there can be no opportunity for the employer to make an incorrect decision and thereby subject himself to the severe penalties of the law.

We object to any law, the administration of which provides an open door for unfair advantage, unreasonable penalties and unwise regulations on the part of the employe or the employer, and which creates an open season against employers by any shyster lawyer. The discharged employe who, disgruntled by reason of his release, takes advantage of the law to gain for himself far more than wages by penalizing his employer should not be encouraged and assisted by either the law itself or by bureaucratic administrators.

Certainly many of the provisions of these laws are totally un-American and should be repealed or amended at the earliest opportunity.

Before concluding this paper it might be proper to give some attention to its subject "Wage Trends and Their Effect on the Telephone Industry."

In spite of the pronounced policy of the present administration to control inflation, one has only to look at the tremendous increase in wages brought about as a result of the Fair Labor Standards Act, the encouragement which the administration has given to organized labor, and the decisions of the War Labor Board, to conclude that we are definitely in a period of high wages—much higher than ever before experienced in the history of the United States.

There is much talk that, with the close of the war, we will be faced with a large surplus of labor. Management is greatly concerned with the labor problem. Will the return of millions of soldiers to civilian life and the release of other millions of workers in war production plants result in a shorter work-week with the continuation of present wage rates? Will the employer be required to pay for 48 hours' time and receive only 40 hours of work? Will inflation increase, requiring still higher hourly rates of pay, or will the surplus of labor result in a decrease of hourly rates? I do not pretend to know the answers to these questions, but I do think that management should conscientiously study the trend of the times.

We should analyze the social and economic problems confronting the nation and if, to meet the situation, we find it necessary to substantially increase wages, we should willingly and courageously add the increase to the cost of the service we are rendering. Honest management should be just as anxious to pay fair living wages as the employe is to receive them. If that means higher rates for the public to bear, we should not hesitate to advise our customers of the facts and ask our regulatory commissions for approval of the needed increases.

Let us bear these facts in mind when we visit the polls in the next three weeks. We want to keep America prosperous. We want to assist in maintaining a nation where free enterprise means more than idle words, but, in my opinion, the time is here when justice and equality for all requires immediate and definite changes in many of the social reform laws and in their administration.

We'll Be There Soon

Maj. Leonard Peters, Boston, Mass., picked up the telephone he found in a chateau near Soissons, France, recently, and asked to be connected with Germany.

"Where in Germany?" asked the civilian operator.

"Lemme see," hemmed Major Peters. "I guess Cologne will do."

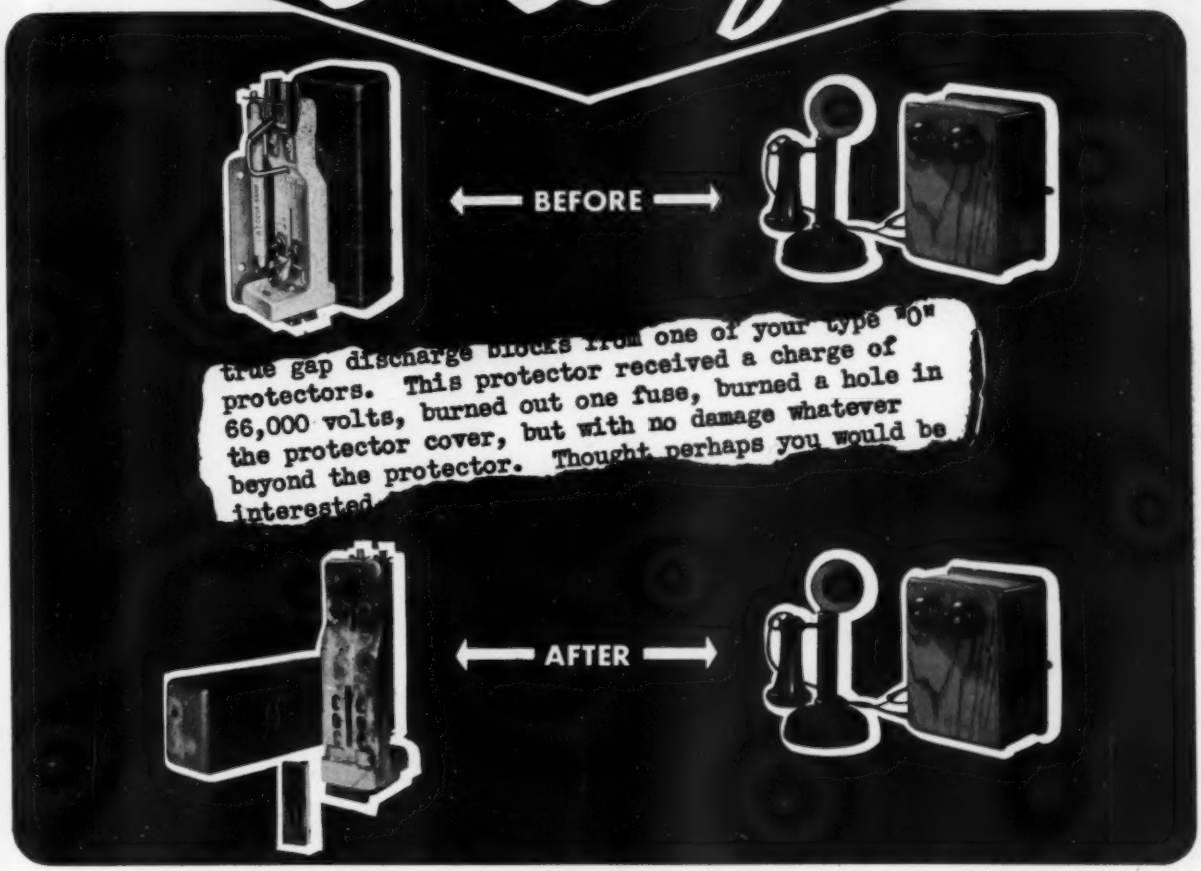
Within a little while, he said, he was talking to the German operator in Cologne who spoke French.

"Are there any Germans around there?" he asked.

"Just a minute," replied the operator. "Yes, there are four tanks in the street out in front."

"That's all I wanted to know," said the major, and hung up.

PERFORMANCE IS *Proof*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true gap discharge blocks from one of your type "O"
protectors. This protector received a charge of
66,000 volts, burned out one fuse, burned a hole in
the protector cover, but with no damage whatever
beyond the protector. Thought perhaps you would be
interested.
AFTER

Above is reproduced a portion of another enthusiastic letter approving the dependability of Cook protection through performance.

We asked the writer of this letter, Mr. Carl O. Morgan, of the Argos Telephone Company, Argos, Indiana, to send us photographs of the protector and instrument. We believe these pictures speak for themselves.

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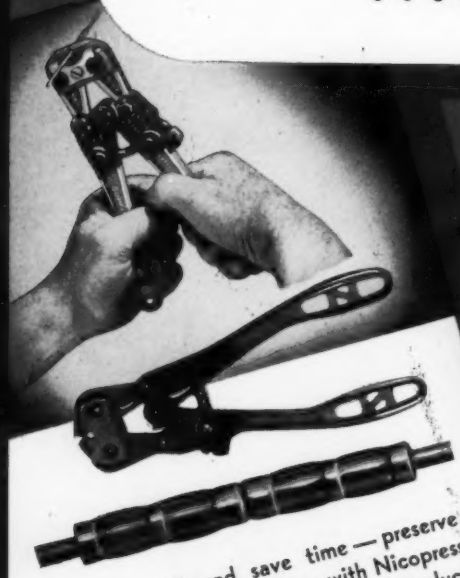

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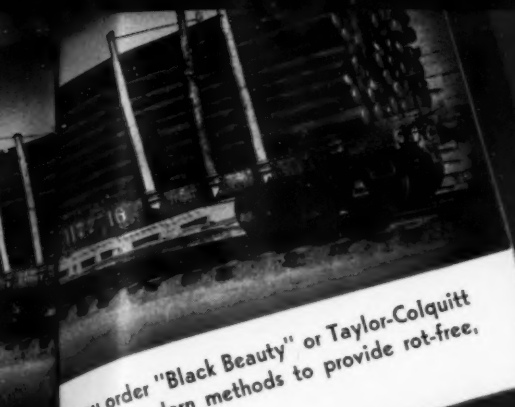
Long life poles. trouble



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MEETING THE 40-CENT WAGE RATE

By WARREN B. CLAY
Manager
Hutchinson (Minn.) Telephone Co.

THE 40-CENT minimum wage order is only an addition to a problem that has been given a great deal of consideration by the Minnesota Telephone Association. We were not concerned with the 40-cent minimum wage until recently, but for the past several years, the officers of the association have been cognizant of the fact that there have been other phases of the telephone business in which increased costs were making necessary a study of the solution to the problem. As the 40-cent minimum wage is only an added factor in this study, I will not confine my remarks to that subject, but will endeavor to point out the remedy for this, as well as other items of increased costs.

It was evident, after an examination by the officers of the association of the annual reports of a number of small companies over a period of years, that the one big factor in their difficulties was their operation, year after year, with a sub-standard rate structure. Many of them had never made a dollar of real profit, and yet were trying to operate with rates established many years ago when materials, labor, etc., were all lower in cost than today.

The study made by the association was substantiated in a report made by A. N. Fancher, supervisor of telephones, Minnesota Railroad & Warehouse Commission, in which he reduced the gross income of several classes of companies to an hourly basis. This report was made to more clearly show the futility of smaller companies' operating with a rate which was inadequate.

I will quote some of the figures from this report for they are very illuminating.

Statement of the Average Gross Revenues and Net Income of Class "B," "C," "D" and "E" Companies Reduced to an Hourly Basis.

	10 Class "B"	*46 Class "C"*	*75 Class "D"*	*126 Class "E"*
Gross Revenue Per Hour of Service	1.56	1.19	.56	.26
Ratio Net Income to Capital Investment	3.74%	3.96%	1.90%	.10%

Please bear in mind that these figures are based on the average of these companies so that there would be just as many companies with returns smaller than the figures quoted as there would be with companies having larger returns. It is certainly obvious that most of these small companies cannot exist under the 40-cent minimum wage order with their present rate structures, for, although many of them are exempt as far as operators are concerned, all other employes are covered.

About 10 years ago the Minnesota association, in the interest of better telephony and feeling a responsibility to the subscribers of the smaller Independent exchanges, contacted the management of many of these small companies, endeavoring to help them in their difficulties. Reception to this offered aid was varied, and it was found that management fell into three classifications.

The first class was that of managers who could see the necessity for an upward revision in rates and acted accordingly with financial profit to themselves and profit to the community through continued good, or improved, service.

The second class was composed of managers who realized that they needed additional revenue but were afraid to ask the public for an increased rate.

The third class was composed of men who could not see that they needed additional revenue. They were the ones who thought that if they had a few dollars left over at the end of the year, they were making money, regardless of the fact that their plant deteriorated or perhaps their employes were underpaid. The last two types comprised the majority of men contacted.

It seemed evident from the above that it was more important to stress the necessity of meeting increased costs rather than telling how it should be done.

The only logical way to meet the increased costs of doing business is by an upward revision in rates. For those managers who have been fearful of this step, the institution of the 40-cent minimum wage offers the best reason in the world for doing so. A copy of the order must be posted in your exchange where it can be made evident to the public as it is to the employe. This order is certainly plainly worded and offers concrete evidence of an increased cost of rendering service. I would like to point out also that, although operators in exchanges of 500 stations or less are exempt from the provisions of the order, the mere fact that other employes are being paid this wage eventually will lead to dissatisfaction. Thus, it would seem logical to plan on paying a higher wage to operators than is now being paid so that the differential will not be as great.

Countless exchanges have increased their rates in the last few years, and I know, at least in Minnesota, that if service were satisfactory, little or no loss of stations resulted. Because of the experiences we have had in this respect, it seems incomprehensible that anyone should fear this step.

It is necessary that a great deal of educational work be done by the national association, the various state associations and individual telephone men to help the above third-mentioned class of managers in their troubles. They must be made to see the fallacy of attempting to render service at rates that are insufficient, for until they understand the principle of an adequate rate structure, it is unlikely that their communities will benefit from good telephone service.

I believe it can be pointed out that in an exchange operating with insufficient revenue, one or more of three conditions will inevitably occur. In order of their probabilities, they are:

(1) A decline in efficiency of exchange lines, central office and subscriber station equipment.
(2) Insufficient pay to employes.
(3) Loss of return on capital investment.

When the first-mentioned condition has occurred, a decline in service to the telephone public is the result. As this decline in service becomes more pronounced, the public is paying too much for telephone service, regardless of how low the rate is. A study of statistics of those exchanges having poor physical plants clearly demonstrates that they have lost most heavily

(Left to Right): ALBERT D. STERN, MAURICE BONNOT, C. P. GALLOWAY, and JOHN J. CLAIR, JR., New York, Frederick Hart & Co., Recordgraph Division.

in subscribers. To emphasize this point by comparison, those exchanges that have maintained good service, or have improved service, have made substantial gains in stations.

An example to illustrate this point is that of an exchange now being helped by the Minnesota association. Because of deteriorated plant and equipment, poor service resulted, with the consequent loss of one-third in number of subscribers; this loss in spite of an increase of 15 per cent in population during the last 10 years. An investigation was conducted by contacting the former subscribers to determine the reason for their discontinuing service. In almost every case it was because of the poor service and not because of rates.

An example of the second-mentioned condition is illustrated by the following incident. Interviewing the manager of a small company, whose rates apparently were not sufficient to justify continued good service, the secretary of the association was informed that the company was giving good service and making money. In checking further into the details of the company, the discovery was made that the employes were being paid an insufficient wage. In reality, the company instead of making money, actually was indebted to the employes to the extent of several thousand dollars. I believe that comment is not necessary as to the prospects of companies in this situation except to say that management such as this is not only a black mark on the record of Independent telephony as a whole, but these abuses, and similar ones in other industries, have helped create many of the regulations with which we are confronted at the present time.

An example of the third-mentioned condition has recently been evidenced in another exchange being aided by our association. Excessively low rates in this exchange have resulted not only in poor plant, but also in lack of return on invested capital. This is a relatively small company, valued on the books at $17,000. It now becomes necessary, because of complaints of poor service to the Minnesota Railroad & Warehouse Cimmission, to completely rebuild and replace the entire plant when materials become available. Esti-

In this threesome photographed by Ray Blain are (left to right): MR. and MRS. D. F. NEALE and W. O. MYERS, Topeka, Kan., Cable Spinning Equipment Co.

mates on the cost of this work amount to $34,000, or double the original plant value. However, the poor record of returns on the old plant has thus far prevented any investor from agreeing to advance the necessary money for rehabilitation. It is certainly evident to anyone that if it were impossible to realize a return on the original investment of $17,000, it certainly could not be done with an investment which is twice that of the original.

In the three examples cited above, the principal cause of trouble was the lack of adequate revenue. Owners, employes and the telephone public alike have suffered, and it should be conclusive evidence that the manager who gives low rates precedence over good service is doing an injustice to his community.

These examples are also an indication of the statement I made previously, that it is more important to impress upon telephone management the necessity of meeting these increased costs rather than how it should be done. It certainly would have been useless to explain to the managers of the above-mentioned exchanges how to get adequate rates, for they could not see the necessity for them until too late.

I do not wish to imply that it is only a question of an upward revision of rates to overcome these difficulties, for there are other things to take into consideration.

In an exchange that has given poor service because of inadequate rates, or for any other reason, it would be necessary to make an improvement in service before applying for higher rates. If the subscribers have not had good service and feel that they are not getting all they are entitled to, it would be logical that there would be objection to any increase, unless the management of the company evidenced its good faith by making an improvement.

In the preparation of a rate case, it is important that the public fully understands the problems with which a telephone company is faced. If the public is informed as to these problems, the good faith of the management, expressed by the rendering of good service, or provisions are made to improve service, little trouble will occur in the procedure. However, if over a period of years, the management of a telephone company has had little or no regard for the public served, has not been cooperative in its community, and has taken everything and given little, the possibility of increasing rates without difficulty is very small.

As for other ways to meet the 40-cent minimum wage, in addition to an adequate rate schedule, there is mainly the possibility of converting to dial operation. This question should be given careful consideration by all small companies, for it is as much the problem of telephone management, in the

This threesome are (left to right): ALFRED C. ECKERT, Automatic Electric Sales Corp., W. H. WALTER, New York City, and JAS. H. RODGER, Minneapolis, Minn., Naugle Pole & Tie Co.

interest of subscribers, to avoid excessive rates, as it is to avoid inadequate rates. Even prior to the institution of the 40-cent minimum wage order, some divisions in the Department of Labor were maintaining that any wage under 50 cents an hour was sub-standard, and

perhaps that figure will represent the next minimum wage. Thus, some of the departments of the federal government are eliminating any question as to whether dial operation, with its increased investment, can be proved in.

The construction of outside plant offers possibility in reducing costs of operation. Care should be taken to build outside plant with the idea of permanency and low maintenance costs, rather than with an idea of economy in construction. Workmen should be provided with adequate tools and equipment to perform their work properly, speedily and effectively. Also, it is important and pays big dividends, to enter into a program of effective preventive maintenance. This will not only result in financial savings, but also in more adequate service to the subscriber.

It would be well also to consider the savings possible by refinancing at this time when money is relatively "cheap" and more plentiful than in the past. Any savings that can be made without adversely effecting service should be made.

In our own company, we made preparations to meet the 40-cent minimum by converting to dial operation and asking for an increase in rates. Fortunately, the program of conversion had progressed far enough so that we were not stopped from completing it because of priorities. We were delayed somewhat in the consummation of the program by the difficulty in securing equipment, but the project was finished about a year and a half ago. It was necessary for us to ask for an increase in rates amounting to $9.00 per year on business telephones, $6.00 per year on residence telephones and $3.00 per year on rural telephones. In spite of this increase in rates, not to mention the added federal tax, we have gained 147 stations since converting to dial operation, with an additional 40 orders for telephones to be filled as soon as equipment is available. The actual gain in stations, plus the held orders, amounts to a 13 per cent net gain in stations. This is in an agricultural community that has not had an influx of population because of war work.

In conclusion, I would like to stress the point that the 40-cent minimum wage order will not be the last item of increased costs in the telephone industry. We should all endeavor to insure our public relations by improving service to the extent that not only we, as managers, but also the community we serve, can be proud of the service rendered.

When this has been accomplished, we need have little fear of asking the public for an adequate rate to support service of this kind.

NEW LEARNER REGULATIONS

By F. M. BROWNE
Vice President,
Western Light & Telephone Co.

THE WAGE Hour Division on June 22 announced new learner regulations governing the employment of learner operators in the Independent telephone industry. The new learner regulations were effective July 17, 1944, or on the same date as the 40-cent per hour minimum wage.

To employ learners, an application must be made to the administrator of the Wage & Hour Division, on Form 522-2 furnished by the division for special certificates authorizing the employment of learner operators at subminimum wage rates. These certificates may be issued to exchanges of less than 2,000 stations and to exchanges of 2,000 or more stations when unusual circumstances are shown to exist which the administrator or his authorized representative find would curtail opportunities for employment, such as:

(1) Experienced operators not being available in the locality from which operators are normally hired.
(2) The issue of a certificate will not tend to impair working or wage standards established for experienced operators.
(3) The issue of such certificate will not create unfair competitive labor cost advantages.

At the time application for a special learner certificate is filed, a notice (Form 522-1, Notice of Filing of Application for Special Certificate) must be posted in a conspicuous place and left posted until the application is granted or denied. Upon receipt of the certificate authorizing the employment of learners at subminimum wages, the notice of application is to be removed and filed and the certificate posted in its place.

Special learner certificates may be issued to meet normal labor turnover to the extent of:

One learner in exchanges employing up to eight operators.
Two learners in exchanges employing nine to 18 operators.
Three learners in exchanges employing 19 to 30 operators.
Four learners in exchanges employing 31 to 44 operators.

Special abnormal labor turnover certificates may be issued upon the employer's showing of unusual circumstances. Such circumstances would include establishing new exchanges, expanding of central office equipment or an abnormal labor requirement resulting from the war emergency. Upon such showing, a certificate may be issued for the employment of learners to the extent of the actual need of the individual applicant.

The maximum learning period which may be provided under a special certificate issued in the telephone industry shall not extend beyond the first 480 hours of employment in training for and in switchboard operating.

The minimum hourly wage rate to be paid under a special learner certificate shall be not less than 30 cents per hour for the first 320 hours and 35 cents per hour for the next 160 hours of the learner period. After 480 hours, the rate will be not less than 40 cents per hour.

Employing of learners at subminimum wages is prohibited until the special certificate is received. The special certificate cannot be made retroactive and is effective only on and after receipt by the employer.

Special certificates authorizing the employment of learners may be issued for a period not longer than one year. Special certificates, authorizing the employment of learners to meet abnormal labor turnover, may be issued for a period not longer than necessary to complete the training of the total number of additional learners required and may not be used for the purpose of meeting regular labor turnover requirements.

Learners may be started at any time prior to the expiration date of the certificate and complete 480 hours of training period. An applicant for a position as operator with less than 480

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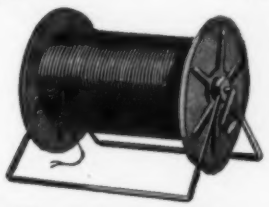

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hours' training can be employed as a learner at subminimum wages until the 480 hours of training have been reached. The employer should have the applicant show on the application for employment, the number of hours worked as a learner operator if applicant indicates any experience in operating work but has had less than 480 hours. If the applicant has had 480 hours or more of experience she must be started at the 40-cent per hour minimum.

Any special certificates may be revoked if it is found that it is not necessary to prevent a curtailment of opportunities for employment, if the certificate has been obtained by fraud or misrepresentation or any of the terms violated. If the certificate is revoked, the 40-cent minimum wage can be made retroactive to the effective date of the certificate or to the date any violation started.

Before any certificate is canceled or revoked, the employer will be notified and given an opportunity to state his case.

In filing an application for a learner certificate, instructions for filling out application Form 522-2 should be followed carefully and all information furnished. I am also informed that where 40 cents per hour is paid for experienced operators, an explanation should be given as to why more is not paid. If this is not given, the application may be returned. When there is an application pending before the wage stabilization unit for authority to pay more than 40 cents per hour, this will be considered sufficient information.

The name of each learner shall be entered on the payroll record of the exchange to which the special certificate is issued. The names of all persons employed as learners shall be listed together in a separate group on the payroll record.

No learner shall be employed under a special learner certificate if, at the time such employment begins, an experienced worker who is capable of equaling the performance of a worker of ordinary or minimum skill is available for employment.

Special certificates issued prior to the effective date of the last amendment, authorizing the employment of learners at subminimum wage rates in the telephone industry, shall remain in effect until they expire.

It would seem that in all fairness to experienced operators, we should adopt the learner schedule, but in the event it is necessary to employ two learners at the same time in an exchange employing eight or less operators, we would be compelled to pay one learner 40 cents per hour and the other could be paid according to the learner schedule. However, to which learner would we pay the 40 cents per hour and to which the learner scale?

An application for an abnormal learner certificate could be made, but since the effective date cannot be made retroactive, one learner would be paid 40 cents per hour until the certificate is received, while the other would receive the learner scale. If and when the abnormal certificate is received, the learner getting 40 cents per hour could be reduced to the learner scale, but the hours worked at 40 cents must be considered as learner hours.

I believe this covers most of the new learner regulations and while they are somewhat more liberal than formerly, there appears to be some doubt as to the wisdom of attempting to employ learners as such, since the employer can violate some of the regulations very easily, and having done so would be subject to having the special certificate revoked.

REPORT ON TOLL COMPENSATION

By E. M. BLAKESLEE
Chairman
USITA Toll Compensation Committee

THIS CONVENTION, in the advance notices thereof, was publicized as a "War Conference." Acting on that suggestion, therefore, your committee, in a meeting at Kansas City, Mo., September 12, 13 and 14, at which, I am happy to report to you, all members were present, prepared for you its report of its activity and progress for the year in such fashion that it could, so to speak, be delivered to you in machine gun bursts, that is, each matter treated is dealt with directly and briefly so that you may take notes for your own guidance on the subjects discussed. I give you, therefore, the report of the Toll Compensation Committee.

(1) *Adoption of Independent Toll Traffic Agreement and Associated Implementing Forms.* There was presented to, and approved by, the board of directors of the national association at the Spring Conference a proposed Independent Toll Traffic Agreement designed by the Toll Compensation Committee for use throughout the industry.

The traffic agreement and associated forms for use in implementing settlements thereunder have been printed and are now stocked by the Association's Washington office and are available to Independent telephone companies, whether members of the association or not, upon requisition and at cost.

Pursuant to commitments made to the Federal Communications Commission by the American Telephone & Telegraph Co., the new schedules of the Bell System companies, embodying the station-to-station principle, were generally made effective as of February 1, 1943. Presumably then, the "indirect" connecting company of the Bell System, that is, an Independent company reaching Bell System lines through the facilities of an intervening Independent telephone company, is entitled likewise to retroactive payment to that date on its Bell business. I doubt, however, that Independent companies kept appropriate records or set aside in a reserve the necessary monies to meet such a contingent liability, the amount of which was not known or determinable until well along in the year.

Now, as to the purely Independent traffic, there is not now, and there never was, any commitment or obligation to pay the higher compensation provided for in the new recommended standard toll traffic agreement prior to the first day of the billing period next following the date of execution of such a contract.

It would be the recommendation of your committee that, as a means of settling the issues where the contracting connecting company delivers to the Independent accounting company both "indirect" traffic and Independent traffic, proper records be established and maintained beginning as of the same date in the future, say November 1, and from the results of the first month's record, or, say three months' record, a compromise be effected by paying the contracting connecting company retroactively to January 1, 1944,

on both classes of traffic. This would keep the settlement in the current year and it would be hoped that the 10 months' retroactive settlement on the purely Independent traffic might reasonably offset any deficiency resulting from not carrying the settlement on "indirect" traffic back into the previous year.

Whatever you do, however, we urge that the larger companies immediately contact their smaller and less prosperous Independent connecting companies and offer this new and higher compensation schedule so that these smaller companies may begin to reap the benefits of the adjusted compensation arrangement. This is just another way in which the small exchange can be helped in securing the revenues which it so desperately needs to enable it to continue to render service to that segment of our economy which is its lot.

(2) *Policy and Mechanics with Respect to Compensation for Independent Line-Haul Mileage.* It will be recalled that in the settlement of the issues in Docket No. 6468, agreement was reached between the Bell System and the Independents whereby, from and after January 1, 1943, each Independent company would be allowed two miles of prorate earning for each air line mile of circuit furnished on a Long Lines message only.

Your committee subsequently recommended that a joint study be undertaken to determine whether or not there is a disparity in the cost of furnishing a mile of toll line as between the Independents and the associated Bell telephone companies on the intra-state traffic the same as was recognized in regard to the Long Lines traffic.

Final settlement of this question entails the compiling of a great amount of technical detail. This, your committee is now engaged in doing and to date, we have evidence tending to show that there should be a substantial increase in the amount being credited to the average Independent company. The committee expects to pursue its studies with all possible dispatch, after which, review of the results and further negotiations with representatives of the American Telephone & Telegraph Co. are contemplated.

(3) *Putting the American Telephone & Telegraph Co. on Notice that We Desire to Be Advised When Interstate Toll Rate Reductions Are under Consideration.* There has been some urge to have the association put the American Telephone & Telegraph Co. on notice that we desire to be advised when interstate toll reductions are under consideration. The thought has also been expressed that similar action be taken with respect to the associated Bell telephone companies as regards intrastate toll reductions.

E. M. BLAKESLEE

The Independent companies are always concerned in, and their interests are affected by, any reduction in toll rates, because lowering of the toll charges not only reduces the average revenue per message of the Independents but also virtually compels the Independents to concur in such reduced rates in order to avoid chaos with respect to the quoting of charges and rating of toll tickets.

It does seem that, in regard to this particular matter, a closer relationship and greater cooperation can be developed in the various states between the associated Bell telephone companies and the state associations, and between the American Telephone & Telegraph Co. and the United States Independent Telephone Association so that we are aware of the rate situation at all times. Efforts along this line are being pursued further by your committee at this time.

(4) *Recent Development in the Hotel Surcharge Case.* The Federal Communications Commission is now suing a number of the larger hotels in metropolitan areas, seeking to restrain those hotels from collecting from guests a so-called surcharge on interstate toll messages placed from guests' rooms.

It will be recalled that the associated Bell telephone companies have said to us that if an Independent company is required or concludes to pay a commission on interstate and foreign communications placed from guests' rooms of hotels, they would allow that Independent company such commission as an additional compensation before prorate computations subject, however, to the limitations that no more than 15 per cent would be allowed and, further, that the 15 per cent commission, plus the compensation which the exchange now receives for its participation in the toll business does not exceed 100 per cent of the revenue derived from such toll business.

We see no need for incorporating this understanding in the toll traffic agreements. We would recommend, however, that for and in consideration of the payment of this commission to hotels, you protect yourself by entering into an agreement with the hotel stipulating that the hotel will not assess a surcharge against the guest making such interstate calls. The entire matter is highly confused and, until such time as the litigation has been adjudicated, we suggest that you keep your understanding with your connecting associated Bell telephone company in a fluid state.

(5) *Adequate Compensation for Through Switching Services Rendered to the Bell System by an Independent Company.* We know that wages, taxes, and other costs of rendering the toll business have increased materially in recent years. We have had increases in our toll compensation designed to compensate for those increases. Some of the larger Independent companies perform through switching services for the Bell System and, in general, the rate of compensation for these through switching services has remained fairly constant over a considerable period.

It is presumed that each associated Bell telephone company will want to pay us an adequate compensation for switching services performed. If a connecting company is concerned that the switching rates now paid to it may not be fully compensatory, it is recommended that that fact be made known to the particular associated Bell telephone company and that it be requested to make a re-determination of the cost and establish appropriate compensation therefor.

»» Clara Grant, an operator at Laconia, N. H., recently attempted to call her home. When the called partly answered, Mrs. Grant said, "I'm all ready. Will you come and get me right away?"

She was somewhat taken aback when an unfamiliar voice on the other end of the line informed her that she indeed was not ready—yet. She had been connected with a funeral home.

REPORT OF TELEGRAPH COMMITTEE

By CARL D. BROREIN
Chairman
USITA Telegraph Committee

THE TELEGRAPH Committee feels that it is approaching the conclusion of the work for which it was appointed and to which it can properly devote its attention. The committee, as previously stated, at no time felt that it was its duty to negotiate contracts, and that it should give its attention to the provision of channels of relationship between the telegraph company and the telephone companies, and to general basic contract provisions that could be uniformly applied in order that inequalities in contract provisions and lack of uniformity in relationship practices could be avoided in the interest of a more satisfactory public service.

The actual contract negotiation, acceptance, modification or rejection of the proposed terms, we considered to be a matter between the contracting parties; namely, the Western Union Telegraph Co. and the particular telephone company involved.

Conditions affecting the particular situation would in no small measure quite naturally enter into the particular contract, and would be worked out by negotiation between the telegraph and the telephone company, even to the extent of perhaps requiring modification in some instances where mutually agreed upon as the general basic principals arrived at in the negotiations of this Committee. In other words, this committee feels that it has performed its service in the development of uniform channels of a negotiation between the telephone companies and the telegraph company, in the provision of a point of contact during this period between the telephone industry through the association and the telegraph industry, and in securing an understanding and agreement of basic contract provisions affecting liability, minimum compensation, training of personnel and other matters of general application of this nature.

Since last spring, at which time a meeting of the committee was held with representatives of Western Union, there have been exchanged by correspondence and personal contact the views of our Committee members and others of the operating industry with Western Union. These exchanges of views resulted in the submission by Western Union of a first draft of proposed contract forms during the past summer.

At a meeting yesterday afternoon (October 11), these contract drafts were reviewed by the committee and other members of the industry interested in this service, and to all intents and purposes the form and provisions of the contracts have been agreed to in the major part, to be at least recommended to the telephone industry by the committee.

The committee has been instrumental, with the assistance of many interested companies, in working out the following program with Western Union.

First, the establishment of a representative in the general offices of the company through which the relationships between the telephone companies and the telegraph company throughout the country would be unified and centralized.

Second, the development of general contract provisions which can be uniform in application. The committee feels, and the Western Union representatives agree, that contracts covering agency arrangements and covering billing and collecting service should be separate, and the contract forms have been submitted on this basis. I had hoped to have these forms available for presentation to the association today, but because of changes made at the October 11 meeting which must be cleared through the telegraph company's general offices, these contract forms cannot be submitted today but will be at the earliest possible date. Upon inquiry, if you are interested, the association's offices will submit these forms to you as soon as they are available.

The important general provisions of these contracts are as follows:

(1) Agency agreement liability is definitely limited to errors for which the telephone company is responsible. Suits involving other matters will be defended by the telegraph company.

(2) Territorial rights by reason of contracts now in existence cannot be guaranteed at this time in the present contracts. The propriety of guarantee, however, is recognized and will be covered by a letter of policy to the Association from the proper Western Union official.

(3) Protection against withdrawal of contracts after development of profitable business will also be provided in a letter of policy from the telegraph company to the association.

(4) Minimum compensation is provided in each contract, being at 45 per cent plus line mileage in the agency proposal and 10 per cent in collection proposal. These amounts may be adjusted upward by reason of local conditions if warranted.

(5) Certain other mutual obligations are entered into, including employe training, use of advertising facilities, etc., which I will not undertake to review here, but which are considered practical and of mutual advantage by companies operating under these arrangements.

It might be added in conclusion that the matter of teletypewriter service and the sale of certain facilities by the Western Union acquired from the Postal Telegraph Co. have been before the committee, but it has not yet been possible to make a determination of these particular matters. I believe the sale of certain facilities referred to above has progressed to the point where prints of some available property can be secured through the association by those telephone companies who may be interested by reason of the rendition of service in the area affected.

We take this oportunity to express to Mr. Hitchen and the Western Union representatives assigned by the general offices to this work, our appreciation of the cooperative manner in which they have approached our work and the consideration which they have given our proposals. They have gone to the field and worked with the companies who are most affected at the present time by these contracts. In this manner they have secured a practical understanding of the problems involved.

It has also been most gratifying that all the companies in the field have worked in cooperation with the Telegraph Committee, and the job of the committee could not have been accomplished in the manner it has without the assistance and the cooperation that has been given us by the operating companies. This job has been an outstanding example of open minded consideration on a business basis of mutual relationships in the interest of public service.

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REPORT OF POSTWAR COMMITTEE

By E. C. BLOMEYER
Chairman
USITA Postwar and War Activities Committee

FROM TIME to time during the year, the Committee on Postwar Plans & War Activities has reported on its current war activities, in statements, pamphlets and other distribution through association channels. We will not consume time by describing those activities again. Consequently, this report will deal principally with the committee's activities as to postwar planning.

Since the October, 1943 report on this subject, made by our predecessor committee, the Postwar Planning Committee, it has become possible to see more clearly the prospective shape of at least some of the things to come. Even so, the committee points out that statements based on what anyone believes may or will happen are to a large extent prophecies, and must be dealt with as such. The committee's statements as to what it thinks will happen after the war are, therefore, only expressions of opinion, based on the committee's study of such matters and of their apparent present trends.

Governmental Controls

The necessity of making peacetime employment available to millions of people as soon as possible after their wartime employment or military service ceases will, we think, result in cessation or relaxation of many, if not most, government wartime restrictions on industry immediately after the end of the war in Europe. Preparation for this is already being made by government and its agencies.

On September 5 the War Production Board announced a broad plan for the relaxation of its controls on production for civilian uses at the end of the European war. This plan comes generally to the proposition that civilian production and activities are to be limited, after Germany is defeated, only to the extent necessary to supply the things necessary for carrying on the war against Japan.

It is a part of the plan, however, that WPB will continue such controls as may be necessary to enable essential industries, such as utilities and including the telephone industry, to continue to function without demoralization of their services through the remaining war period and until normal peacetime operations can be resumed.

Applying this specifically to the Independent telephone industry, it apparently means that, after the end of the war in Europe, all the production of Independent manufacturers above that needed for the war with Japan will be available to Independent telephone companies, but that, excepting as to emergency cases, the industry will have no priorities upon materials, manpower, etc., as against other industries. It also apparently means that practically

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all limitations against extension of telephone plant and central office equipment, and maintenance work, rehabilitation work, etc., will be removed; the company's ability to do these things will depend on its ability to obtain the equipment, materials and manpower with which to do them.

It also apparently means that some protection will continue to be afforded operating companies with respect to their obligation to take care of all unfilled orders for telephones.

Since the position of the Communications Division of WPB on these matters is being discussed at this convention, we will not prolong our reports by going into detail on the situation, excepting that we bring to the attention of operating company managements our following opinion regarding the amount of new telephone equipment that will be available after the end of the European war.

As has been stated, the new WPB plan means that, after the end of the war in Europe, all capacity of Independent manufacturers above the things they are called upon to make for the prosecution of the Japanese war will be available for Independent operating companies without priorities and with few or no restrictions upon their use by operating companies.

We point out, however, that this may not mean that a large amount of equipment will be available to operating companies immediately or soon after Germany is defeated. Communications equipment, such as is now being made by Independent manufacturers, will remain one of the first-rank military essentials, and will continue to be needed for military purposes in great quantities. It is very doubtful if the military demand on Independent telephone manufacturers will be substantially reduced immediately after the end of the European war, although it will no doubt be reduced more and more as the war with Japan progresses.

It is our opinion, therefore, that managements of operating companies should not count upon any great quantity of new telephone equipment being available to them immediately or even very soon after the war in Europe ends, although the amount available will, we believe, increase as the Japanese war nears its end.

We suggest that operating companies needing postwar equipment should discuss their situation with their manufacturer or supplier at once, since an orderly scheduling of manufacturing for civilian use will be helpful to both operating company and manufacturer.

Surplus Government Equipment

It is a known fact that a vast amount of many kinds of things acquired by government for military purposes will become surplus government property after all hostilities cease; much of it will become surplus when the European war ends.

How much of this surplus will be telephone equipment, usable for or adaptable to commercial telephone use, no one now knows.

It is known, however, that in all governmental postwar activities the emphasis will be upon the creation and maintenance of a high level of employment. It has been announced in substance that government will not dispose of surplus property in such manner as to lessen postwar employment.

This proposition of the disposal of surplus government property has been having considerable debate in Congress, which is making the policies and setup for dealing with the situation. Until all those things are defined, we cannot know just how it is to be dealt with.

Since a great deal of the military production of the telephone manufacturers has been of specialized articles for strictly military use, rather than telephone equipment of or near the commercial type, we think it likely that the amount of commercially usable surplus telephone equipment will be smaller than some may have thought, especially since it is stated that quantities of American-made telephone equipment will be used for rehabilitation in devastated countries.

Because of the present uncertainties in this matter, the only recommendation that we can make upon it now is that it is one upon which the association should keep close and constant watch, so that it may keep its members fully informed on it at all times.

Growth

In April and May, 1944, the committee took a poll of a number of Independent companies of various sizes—and, therefore, representing a good cross-section of the Independent industry—on several questions. The companies polled operated more than 830,000 stations.

Eighty-four per cent of these companies, representing 87 per cent of the stations, reported that they had a larger than usual net gain in stations since 1940, and 76 per cent of the companies that had made such gains reported that they expected a net loss in stations either before or soon after the end of both wars. In a preponderance of cases, the loss expected was around 25 per cent to 50 per cent of the net gain since 1940.

We think this indicates that the station net gain or net loss situation immediately after peace comes is a local issue, and will vary greatly in different territories and exchanges, depending on the amount and kind of war activities that have been carried on in each place.

We believe, however, that possibilities exist for a large postwar growth in telephone stations over the long term. We think a considerable portion of this growth will occur in the natural course of events, from growth of the population and from a larger per capita demand for telephone service than has ever existed in this country before, due to the fact that, during the war, many people have become more than ever accustomed to and dependent upon the telephone.

We submit, however, that a large long-term postwar growth in telephone stations does not necessarily mean that Independent companies will receive their pro rata share of such growth unless they act on their own behalf to obtain it. It is a generally known fact that station growth is usually smaller, on a percentage basis, in smaller cities and towns—in which most Independent companies operate—than in the large metropolitan centers.

We recommend, therefore, that all Independent companies plan and organize now to sell telephone service. Such efforts should be directed at retaining as many as possible of the stations gained during the war, to selling additional residence extensions when they can again be installed and, when the held order situation existing at the end of the war has been taken care of, to sell telephone service to the many people in every community and exchange area who do not then have it. We believe, in other words, that Independent companies should become "sales minded" in order to obtain their due share of the postwar growth in telephones.

Postwar Earnings and Rates

For the year 1943 the Independent telephone companies of the country, taken as a whole, had the highest gross revenue in their history. According to the statistics compiled by the association, the gross revenues of Class A and Class B companies reached, for 1943, the unprecedented total of 117 million dollars. Indications are that gross revenue of the Independent industry was more than 40 million dollars higher than its total gross revenues for the year 1939, the last year before the effects of defense and war activities began to be felt by industry.

During these four years Independent companies taken together experienced, of course, a large net gain in their number of stations in service.

The result of this situation has been that for the year 1943 the net operating revenues of the Class A companies averaged around $5.00 per station more than they did for 1939, or for the average of the three prewar years of 1937, 1938 and 1939. By the same comparison, the net operating revenues of the Class B companies averaged some $3.00 more per station.

There is, however, a "fly in the ointment" in this apparent picture of prosperity, and also a potential danger for the postwar years.

The same association statistics that are quoted above, show on analysis that the net amount available for dividends of the Class A and Class B companies, taken together, were almost 50 cents per station lower in 1943 than in 1939. One important reason for this was that the Class A and Class B Independent telephone companies paid some 26 million dollars in taxes for 1943, as compared with about 9 million 100 thousand dollars for the year 1939.

The potential danger in the situation comes from the fact that, of the large increase in gross revenues for 1943 over 1939, about one-half came from increased toll revenues. In fact, the net toll revenues of the Class A and Class B companies, taken together, more than doubled in the four years. For 1939 the amount was about 16 million dollars; for 1943, more than 35 million dollars.

As every telephone man knows, toll revenues can slump sharply and quickly. It is important, therefore, to analyze the relation of toll revenues to total present revenues of Independent companies.

As to the 151 Class A Independent companies, toll revenues increased from an average of $8.69 per company-owned station in 1939 to an average of $14.31 per station in 1943. (The term "company-owned stations" as used here includes PBX and extension stations.)

As to the 81 Class B companies, toll revenues increased from an average of $7.61 per company-owned station in 1939, to an average of $11.77 per company-owned station in 1943.

(It should be stated that practically the same averages are arrived at if, instead of using the year 1939 for the comparison, there is used the average of the three years of 1937, 1938 and 1939. The difference is only a few cents in either case.)

The figures quoted show an average increase of toll revenue per company-owned station of $5.62 for the Class A companies. But, during the same period, the increase of exchange revenue was only an average of 78 cents per company-owned station. And, during the same period, the increase in operating expense (exclusive of accruals for depreciation, and taxes) was an average of $3.41 per company-owned station.

As to the Class B companies, the increase of toll revenue averaged $4.16 per station; the increase of exchange revenues averaged 13 cents per station, and the increase of expense averaged $2.73 per station.

It is clear from the foregoing that many Independent companies are more heavily dependent now on toll revenues than they have ever been before. It is also clear that a sharp decline from the present very high rate of toll business would in many cases have a serious effect upon the net earnings of Inde-

pendent companies. It is hoped, of course, that reductions in federal taxes after the war will to some extent cushion such a shock—and this will be particularly true in the cases of companies now paying federal excess profits taxes if such tax is abolished—but there can be no certainty that the two events would occur simultaneously, or that any tax relief would actually overcome loss of toll revenues.

The committee points out, therefore, that in many cases exchange rates must be raised so as to carry their full share of the increase of expenses that have come about during and that will remain after the war period, and we think it must be assumed that much of this increased expense will remain after the war period. It seems an inescapable conclusion that the price for exchange telephone service, like prices of many other things, will have to be put on a level to fit existing expenses. We believe that every Independent company should be making, now, its plans for doing that.

Taxes

It is generally recognized that the amount and method of postwar federal taxes will have vital influence on the level of postwar employment. There is now more widespread interest in federal taxation than there has ever been before, and many organizations have been formed to study and make recommendations on postwar taxes from the employment standpoint.

It is calculated that the postwar annual federal budget will be around 2½ to three times the normal prewar budget. It is obvious that under such conditions, postwar federal taxes must be higher than prewar.

From the standpoint of the maintenance of a high level of postwar employment—which we must have if we are to avoid postwar depression—the method of application of federal taxes is as important as the amount levied. To maintain employment, taxes must be levied in such manner as to encourage business expansion and the establishment and growth of new businesses, rather than to deter such activties, as present tax methods do.

We believe the federal excess profits tax will be repealed after the end of the Japanese war, and that it will probably be ameliorated before then. We think that such nuisance taxes as the "capital stock and declared value excess profits tax" will be abolished. As to corporate normal tax and surtax, it is difficult to predict—except to say that there is a strong movement, from nearly all directions, to eliminate or minimize the present double taxation on corporate earnings paid out as dividends. Several ways of accomplishing this have been suggested and whether any final plan will include reduction or elimination of corporate normal tax and surtax or whether the desired end will be accomplished otherwise cannot be predicted with any certainty.

We think Congress will make a sincere effort to adjust federal taxing methods so as to encourage business and employment.

Farm Telephones

The report last year of the Postwar Planning Committee recommended that study be made by the association of the existing and prospective farm telephone situation, with the idea of finding things that could be done to maintain and increase the number of farm telephones. This matter was referred by the association to its Commercial Committee and Plant Committee, and is now in their hands.

This question is of paramount importance to the entire telephone industry, and of particular importance to companies operating in rural sections. Indications are that unless the telephone industry itself finds and applies the solution to the farm telephone problem, agencies outside of the telephone industry—perhaps governmental agencies—will undertake to do that. Already there are signs of such happenings.

On September 20 a commissioner of the Federal Communications Commission, in a public address, called attention to the farm telephone situation, saying among other things that while total telephones in service had increased 35 per cent, the number of farm telephones had decreased nearly 40 per cent, and pointing out sections of the country where more than 95 per cent of the farms were without telephone service, and suggesting in effect the establishment of a "telephone REA" to take care of the farm telephone situation. (Incidentally, the committee feels that as of 1944, the farm telephone situation is not as bad as is stated by the commissioner.)

A well-known newspaper columnist has taken up the issue under the slogan "Phones for Farmers," and suggesting that the REA has shown the way to provide telephones on farms.

In the committee's opinion, this matter is one of great importance to the entire telephone industry, and one which deserves and requires persistent and concentrated effort by telephone companies and by the national and state associations. The committee recommends that the proposition be given a high priority in the association's activities, and suggests consideration of the creation of a special committee, which special committee could give its entire attention to the important question.

Pension and Retirement Plans

There has been put up to the committee the proposition that it should study pension and retirement plans applicable to Independent telephone companies and suitable especially for smaller companies, and make recommendations on the matter.

The committee has made such a study, but finds that the sizes and conditions of Independent companies vary so greatly that it is impossible to suggest any one plan that would fit all of them. This is unquestionably a proposition that must be worked out separately by each company interested in it, to fit its own circumstances and its ability to inaugurate such a plan.

The committee recommends to the owners and managements of Independent companies that they give consideration to the practicability of the inauguration of a pension or retirement plan for their company, and recommends to the association that it have prepared, and that it circulate to member companies, a description of and information concerning the various kinds of pension and retirement plans that are customarily used in industry.

Technological Improvements

The committee is of the opinion that it is not to be expected that technological improvements in wire communication, made during or as a result of the war, will bring about any immediate basic change in telephone apparatus or practices. While such improvements, inventions and discoveries will, of course, in time have their impact on wire telephony, they will, in the committee's opinion, come into use gradually and over a period of years, like any development of the art. It is probable that war discoveries will somewhat accelerate development in telephony during coming years, but, in view of the time required for the adaptation of new developments to any industry, including field and other tests that must be made of them, it hardly seems possible that there will be basic changes in telephone apparatus and practices immediately or even very soon after the war.

Depreciation

Our predecessor Postwar Planning Committee, in its report last October, suggested that wartime usage and lack of replacement of telephone equipment and plant would require an increase in postwar depreciation accruals, and recommended that the Depreciation Committee of the association make a study of this situation.

The Depreciation Committee made such a study, and stated, in its opinion, the condition named would apply to so small a percentage of a telephone plant that it would not affect the overall rate of provision for depreciation.

The committee is grateful to Clyde S. Bailey and the others of the staff of the association, for the help they have given it during the past year. It also expresses its appreciation for the cooperation of the state associations, 23 of which appointed, at this committee's request, postwar planning committees, which have cooperated wholeheartedly with this committee during the year. All of this assistance has been of great help to this committee.

VALUE OF TELEPHONE DIRECTORIES

By FRANK DAVIES
President
General Telephone Directory Co.

THERE ARE several considerations involving telephone directories that merit discussion today. For one thing, there is the result secured throughout our industry in cooperation with the War Production Board in conserving the quantity of paper used in telephone directories. But important as this and other considerations may be, I believe that the time allotted for this discussion can best be devoted to a consideration of the part telephone directories can play in the economic life of the nation.

According to the United States Chamber of Commerce, there are six million farms and three million business establishments in this country. Ninety-three per cent of the business establishments, as well as the farms, are classified as small businesses. During 1940, 10 million of our people were engaged in agriculture, forestry and fishing; 11 million more were employed in the various professions, government service, and similar activities. But 31 million of our people were employed in business establishments and probably no less than 20 million of these were employed in small businesses, that is, small manufacturing plants, small retail and wholesale enterprises, small telephone companies and many others. Nearly half of all our gainfully employed people work for their daily bread in small business places.

It follows that if our American way of life is to continue, a considerable part of the nation's labor supply must be absorbed by small businesses, either as employers or employes. There has been some loose talk recently with regard to the responsibility of business men to create jobs. Actually, good business men are efficient which, in turn, means fewer jobs unless accompanied by expanding markets. No business man has a responsibility to create jobs for the sake of jobs alone, because this would be boon-doggling in the private sector of the economy. But business men do have a responsibility to create markets that will create jobs, and it is along this path that telephone directories, and through them, the telephone business, can play an essential part in our economy.

Dr. Emerson P. Schmidt, director of economic research for the United States Chamber of Commerce, declares that scarcity of jobs is the symptom of a disease, and not the disease itself. There is plenty of work to be done—the new technology, new raw materials,

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new products and, most of all, the unsatisfied human wants and needs, both as a result of the pent-up demands of the war period and the low living standard of many of our people. The problem, briefly stated, is to get the economic machine off dead center; the economist calls this correcting "economic stagnation." In the directory business, we look on it as urging Pete to buy from Joe so that he can pay Harry who in turn will buy from the first man, Pete. In the Army they call it simply, "Keeping things rolling."

But to keep things rolling after the war, we must develop a set of conditions that will keep the number of small businesses in this country constantly increasing and expanding. Even after every man and woman dislocated by the war has been restored to a normal, peacetime occupation in our society, some 13,000 new, previously non-existing jobs must be created consistently each week, year after year, either in new business or in existing businesses if we are to keep things rolling. At least half of these job opportunities must be created in the field of small business.

The yearly development trend of new business establishments in America is similar to telephone development trends: On the one side, telephones connected; on the other side, telephones disconnected, leaving a net gain or loss each year. Every telephone executive, viewing in the same manner as he would telephone statistics, the trend of business births and business deaths in the United States since 1920 must do so with some concern. According to Dun and Bradstreet, in 1925, 496,000 new businesses were established and 451,000 discontinued for a net gain of 45,000; in 1939 (our last normal prewar year), there were 376,000 businesses established, and 349,000 discontinued for a net gain of 27,000, that is, about half the net gain of 1925. This downward trend, if it continues unchecked, forecasts a drying up of the source of new telephone installations, decreased long distance usage, and a loss of the opportunities for jobs.

It is axiomatic that, if we are to have a reasonable level of employment and a satisfactory level of business during the postwar period, a consistent net increase of successful new businesses must be maintained year after year. One of the factors essential to the survival of these new businesses is to be able to attract to themselves enough customers with enough money to keep them alive. So then, it is fair to ask: What factors influence a given buyer to first select a given place of business? Of course there are many influences—the reputation of a firm, its location, recommendations by its friends and

customers; efforts of its salesmen; advertising, and other factors. These conditions vary, of course, as between different kinds of business. A professional man, for example, may depend almost entirely on the recommendation of others for his new business, while a service station will depend primarily on its location.

In order to learn actually what influences control people in selecting firms with whom they do business, the Ohio Bell Telephone Co. has made a significant analysis. Arrangements were made with various firms advertising in the telephone directory to secure a list of all their new customers. These firms understood that the telephone company planned to call these new customers and ask why the new customer had selected a particular place to do business. The survey was conducted in every way so as not to bias the answer secured. In quoting totals, the fact should be borne in mind that all accounts are directory advertisers; therefore, some of the other factors might not apply to all the accounts included in the total. Thousands of new customers were interviewed, but in terms of 100 interviews here are the reasons given by these new customers as to why they had selected a particular firm:

37—By reason of the recommendation of others.
23—From advertising in the telephone directory.
16—By reason of all other forms of advertising.
9—Because of the reputation and business connections of the firm.
9—Due to solicitation by the firm.
6—By reason of the location of the business place; that is, they passed by the store.

That is one carefully prepared appraisal of what it is that influences people to do business with one firm rather than another. In this case, 23 out of every 100 new customers were influenced by the telephone directory. Is there anyone who can deny that we in the telephone industry have a powerful influence in our hands to help new businesses become established, and help established businesses stay in business?

There are those of us who intuitively believe that these figures might apply in the case of service lines of business —laundries, cleaners and the like. However, one of the many interesting cases reported in the Ohio Bell survey was the report on a company selling coal and sand conveyors. The survey disclosed that out of the 14 new customers interviewed for that firm, the conveyor company had secured eight new customers through the recommendation of others and six by means of a one-inch advertisement in the telephone directory.

The view is also held that such a situation might not apply in a small town where there is only one cleaner, one photographer and one electrician. We believe that the advertising possibilities are not actually proportionately less in a smaller town, but that they are different. A rural community, for example, has certain specialized demands that are frequently met on a county-wide basis—auctioneers, baby chicks, live-stock buyers, rendering plants, seed corn, threshing equipment, well-digging contractors, and so on. For these and similar needs, classified directories are being consulted more and more in the smaller exchanges.

For the purposes of this discussion, I asked Mr. Berry, Mr. Loomis and several of the directory managers in the Bell System to tell me of actual cases, in their own experience, of small businesses which their representatives had called upon in the past and, through the medium of telephone directory advertising, had since been built into successful business enterprises. Time permits a brief recital of only a fraction of the many cases reported, but here are a few examples.

At Denver, Colo. in the summer of 1939, a Mr. Merritt started a packing and crating service in his residence where he did his work on nights and Sundays because he was then employed by another concern. He ordered a business telephone so he could advertise in the directory, and took a small advertisement costing $2.00 a month. Mr. Merritt has built up a thriving business, giving jobs to several others, and attributes 75 per cent of his total business volume either directly or indirectly to the directory in which he now carries advertising in the amount of $60 a month.

In Fort Wayne, Ind., the Walton Coal Co. was skeptical of directory advertising, but in 1931 was sold on the idea of installing a test number in connection with a small ad costing $2.00 a month; that is, a telephone number which was listed nowhere except in the advertisement. The number of calls on this test line were so convincing that the firm has been a consistent advertiser for 14 years. The Walton company has built itself up from an estimated 15th place among the 40 coal dealers in Fort Wayne to one of the top three and is so certain that directory advertising has contributed to this growth that the firm now carries $85 a month.

In Ohio, there was a not-too-successful undertaking establishment, and its owner was not interested in telephone directory advertising because he believed that he could advertise his firm better by lending folding chairs to people for parties and weddings. During 1938, a directory representative convinced him that he should try to capitalize on his investment in chairs by carrying a small advertisement on "Chair Rental." Since 1938, that man's business has gradually changed from funerals to chair rentals, in fact, the other day he incorporated as the "Acme Chair Rental Co."

Loren Berry tells of an insurance firm in Ohio which is open for telephone calls 24 hours a day and does its selling with sensational success by a large advertisement in the telephone directory; also of a new laundry firm in Pennsylvania which advertised in a telephone directory that was delivered before the laundry's building was completed, receiving orders from a thousand new customers from the directory advertisement before they were ready to do business.

The Loomis Advertising Co. tells of a hardware dealer who neglected to have his listing removed under "Guns" and is now swamped with calls but has no guns available; of a woman who weaves rugs and gets at least 100 customers a year from a telephone directory advertisement.

All these cases are illustrative of situations where lasting, proved benefits were brought to business people through advertising in the telephone directory. By reason of their training in the merchandising problems of all types of small businesses, directory men have proved themselves to be helpful to business firms, even beyond the matter of selling them advertising.

This was well illustrated recently by the Southwestern Bell Telephone Co. when the directory sales force of that organization helped the 145,000 business men served by Southwestern Bell in meeting some of the most troublesome problems brought on by the war emergency. They did this by passing along ideas on what to do when business men were short of help; steps that could be taken when short of merchandise and materials; how to meet delivery problems and how to hold customers and continue to build customer goodwill. To these harassed business men, obviously it was a well received gesture of friendliness to have representatives of their telephone company step forward and give them sound and helpful solutions for these problems.

Principally, as a result of the war, it has been brought home to many of us the importance of the telephone directory as an industrial merchandising medium. This is probably for the reason that the processes of large manufacturers had previously been

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FOR POSTWAR JOBS

WE are now accepting applications from men in the armed forces and from others for peacetime work selling Addressograph and Multigraph equipment.

With the end of the war we believe competition in American business will be keener than ever. We believe the companies with high costs and low efficiency will be forced out of the running. Because all of our products are designed with one purpose . . . to cut business costs and improve efficiency . . . we expect our sales to increase tremendously after the war.

Every business that makes or sells *any* product or renders a service is a prospect for Addressograph or Multigraph equipment or both.

In addition to all of our own men, now on leaves of absence in the armed forces, we expect to add more than two hundred salesmen to our established offices in all parts of the country. Salesmen will once again be *job makers.* Our preference is for industrious young men with selling ability who are familiar with office or factory systems and methods, accounting procedures or similar business operations. If you feel you can qualify for the job of selling Addressograph-Multigraph simplified business methods to American business, write us now giving full information about yourself and your business background.

Write The Addressograph-Multigraph Corporation, Cleveland 17, Ohio.

Addressograph-Multigraph Corporation

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SIMPLIFIED BUSINESS METHODS

obscure to us because we had not analyzed them. As a matter of fact, large manufacturing might be considered as a coordinated effort of many small manufacturers and suppliers spread throughout all the cities, towns and villages of the nation. To illustrate this, the National Association of Manufacturers has made a survey of 190 of the 252 companies which held most of the war supply and equipment contracts.

In these large companies, more than half of their manufacturing volume is actually distributed to tens of thousands of small companies. For example, the Douglas Aircraft Co. has awarded contracts directly to some 300 principal sub-contractors and 1,500 lesser contractors. But to illustrate how this work fans out to many separate places of business, in one case, a sub-contract has been placed for a valve involving 20 different parts. This single sub-contractor has in turn brought in seven additional sub-contractors to participate in its manufacture.

Now, how do the purchasing agents of these large industrial plants first establish contact with small manufacturers, contractors and suppliers of all types? Apparently, they follow the same processes as the housewife calling a plumber or the farmer calling a hog-buyer. They use the classified directory. The Southern California Telephone Co. has found that 63 per cent of the purchasing agents in the large industrial plants of Los Angeles use the classified directory exclusively in finding telephone numbers, and that in 84 per cent of these cases, they have no particular firm in mind when they look in the directory. In Cleveland, 91 per cent of the purchasing agents, plant executives and industrial buyers in the 113 leading plants use the classified directory, and 57 per cent of them use it in preference to all other buyer's guides. Mr. Berry has shown me the copy of a letter from the purchasing agent of Jack and Heintz, Inc., which says in part: "It is necessary for us to constantly seek new sources of supply. These sources can be reached only through catalogued references. You can readily see the part the telephone directory plays in this situation."

Through the accelerated use of telephone directories for industrial purposes due to the war emergency, many of the industrial plants and many telephone companies are finding ways to improve telephone directories for this kind of use. Many of us are finding opportunities to make our directory advertising more complete by showing specifically what small manufacturers are equipped to manufacture, and exactly what materials the various industrial suppliers handle.

Unquestionably, one of the great and enduring values of a free society is the enormous range of commodities and services available to the consumer. If we had only a few large companies bent on efficiency and mass production, there can be no question but that the range of goods and services made available would be reduced. Having a great variety of producers in competition with one another, the tendency for commodities and services to multiply in number, design and quality is truly great.

With nearly 200,000 different manufacturers and the hundreds of thousands of service establishments each competing for the market, progress is inevitable. Under the stress of competition, prices tend to be lowered, quality tends to improve, and in order to penetrate the market, each producer endeavors to give high value for the money.

Out of this multitudinous effort come new ideas, new products, improved raw material and better service. It is because of this continuing kaleidoscopic change on the American scene that we in the directory business are kept busy, issue after issue telling everybody in town what can be bought from whom. It was also because he instinctively felt this great pulse beat of America that an official of General Motors Corp. stated that, if his company had a monopoly on the production of automobiles, there would be fewer cars produced within 10 years than at the time he made the statement.

By and large, it is the combined effort of the numerous small businesses in the local community which makes that community. The payrolls and other earnings of the many enterprises support the schools, the churches, the government services, the recreational and cultural activities of the community. Flourishing small businesses activate the life, the thinking, the recreational and cultural interests of the people in the community. A multitude of small businesses in manufacturing, service and distribution lend color and variety to our country. To all practical purposes, small business places collectively make it possible for a telephone system to exist.

That is why we in the directory business are proud to be helpful in our way in finding a solution to some of the problems that will be confronting these business men in the immediate future. We believe that some of these problems will involve keeping the arteries of trade from becoming clogged. And we directory men know that we can help to do this.

It is proper, I guess, for any man to think highly of his line of work. In that spirit, all of us in the directory business count it a privilege to work humbly in the service of America's legions of small business men—not because they are telephone subscribers nor because they advertise in our directories—but because they create that indispensable ingredient of our free society—jobs.

Commissions Should Educate Public

"If a public service commission is created, it should distribute sample sets of simple bookkeeping forms, with instructions for the small telephone companies' use. These forms should provide all information required by the different governmental agencies, and such information should be submitted to the commission each year on a standard report form. The commission also should have sole jurisdiction over rates, and should undertake to educate subscribers to an appreciation of the importance of operating costs as a basis for rate structures."—IOWA STATE PLANNING BOARD

Quality fights, too, brother!

IT HAS ALWAYS been more economical, in both dollars and materials, to buy quality. Now when conservation of resources is so important, it is patriotic, too.

When you buy "Eveready" "Columbia" "Gray Label" telephone cells you purchase this kind of material and man hour conservation quality. Fewer battery replacements mean reduced manual care at a time when manpower is such a vital problem. A development of the world's largest dry cell laboratory, these batteries are famous for their long life, high level of uniformity and sustained voltage. The best proof of their quality is the fact that they are used by *more independent telephone companies than any other brand.*

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RATES AND EXCESS PROFITS TAXES

By CARL I. WHEAT
Attorney at Law
Washington, D. C.

A FEW WEEKS ago I was asked to appear before the Railroad Commission of California to discuss the appropriate treatment of excess profits and other federal income taxes in wartime ratemaking. What I shall have to say will be in part a resume of that discussion and in part an outline of certain additional considerations which seem especially pertinent at this time. My California argument was offered on behalf of the Southern California Gas Co., and on the same day your president, Charles F. Mason, presented to the commission certain highly important phases of this problem, from the standpoint of a practical operator, while Harold V. Bozell, of your association, had appeared in the same proceeding at an earlier hearing and had testified most convincingly.

I shall try to be brief, and it must of course be understood that my remarks represent my own personal views, and therefore do not necessarily reflect the attitude toward these matters of all of those whom I have had the pleasure of representing in other connections in this field of enterprise.

This problem of the proper rate treatment of wartime taxes is not new. It cropped up during World War I, and though the United States Supreme Court fully clarified the issue in the interim, it was probably inevitable for the issue to arise again, now that war taxes once more form so large a factor in the lives of everyone. Indeed, just at this moment there is almost a nationwide rash of commission proceedings and other discussions involving this matter. Obviously, it is high time to face the problem squarely, with a view not only to the law but also to the economics that may be involved. Let us first consider the legal aspects.

During World War I the then relatively new federal income taxes were raised to hitherto unheard of levels and a tax called an "excess profits tax" was superimposed upon these higher income taxes. At that time no authoritative ruling had yet been made by the higher courts in respect to the relation of income taxes to public utility rates, and many persons in the regulatory field then held the view that such taxes were—as they said—"a charge on the stockholders and not on the rate-payers." With the enactment of wartime tax legislation and the heavy advance in tax rates, the issue took on new and enlarged importance, and many commissions, including particularly that of California, formally held that such taxes were not to be included among public utility operating expense allowances in the establishment of rates. Indeed, this became for a time almost the general rule.

In 1922, however, the issue finally reached the United States Supreme Court in the *Galveston Electric Co.* rate case, and that court—in an opinion written by Mr. Justice Brandeis—spoke unequivocally and with finality in disapproval of the philosophy of refusing full allowance of federal income taxes, along with all other taxes, as operating expenses, to be recognized and included as such in public utility rate fixation.

In the Galveston case, which involved streetcar fares, the master to whom the case was first assigned had allowed, but the lower court had disallowed, as operating expenses the sum paid in 1920 as federal income taxes under the wartime tax act of the preceding year. In other words, the court was there dealing with the precise statute on which the various commission tax disallowances to which I have already referred were based, and the court declared:

"In calculating whether the five-cent fare will yield a proper return, it is necessary to deduct from gross revenue the expenses and charges; *and all taxes which would be payable if a fair return were earned are appropriate deductions. There is no difference in this respect between state and federal taxes or between income taxes and others.*" (*Galveston Electric Co.* v. *City of Galveston.* 258 U. S. 388, at 399.)

Since the date of that decision the United States Supreme Court, the lower federal courts, the courts of the various states and the ratemaking bodies of both the states and the nation have unanimously followed the principle thus so clearly and authoritatively outlined by Justice Brandeis. (That is, they did until a few seem to have broken away since the current issue arose.) Shortly after the ruling in the Galveston case, the Federal District Court for the District of Indiana, in a proceeding involving a telephone company, disclosed how sound was that ruling when it quoted the following cogent analysis from the report of the master to whom the matter had been assigned:

"It is said by the commission that the reason for deducting as an operating expense, the federal income tax paid by the company, is that 'it is a burden on the stockholders and not on the ratepayer.' *It is obviously impossible that this item should be considered as any other than a necessary expense in the operation of the company.* It cannot be distinguished as an operating expense deductible for the purpose of arriving at net income in calculating the fair return — on any different ground from state taxes. (p. 487.)

"The utility is at the service of the ratepayer and among the other items which are necessary expenses of providing the utility and the service, is the item of federal and state taxes. Unless the utility receives over and above this burden of taxation, a fair return, it is deprived of its property without just compensation, and not only the public service corporation but the public served is injured; for the necessary capital will not be attracted to the business. (pp. 487-488.)

"'. . . It does not appear to the master that in arriving at net income for the purpose of ascertaining the rate of return upon the fair valuation of the property, used and useful, of a public utility, if the income tax be deducted as an expense, it would have the effect to create a more favored class out of public utility concerns, so as to allow them to receive their 8 per cent free of income tax, while all other persons in the vicinity who receive the same per cent have to pay it.' Most of 'the other persons in the vicinity' are adding their income *and excess profits tax* to the cost of their products, and the ultimate consumer is paying the tax. Every merchant and manufacturer is doing this." (p. 489; *Home Telephone & Telegraph Co.* v. *Public Service Commission,* P. U. R. 1922-B, 478.)

We might well add that if any such businessman did not do this,—if he did not earn enough to do this very thing from the prices received for his products,—he would go broke *fast.* The same is true of public utilities. Nothing could be more axiomatic.

If, therefore, the taxes now under consideration by various commissions are in fact income taxes, there seems to be little that can be said on the law side against the propriety—indeed, the necessity—for their inclusion as operating expenses in public utility rate establishment. True, they are high, but they are no higher than those applicable to other types of business, and there is no difference between public utilities and airplane makers or department stores in this regard.

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Of course, it is possible that it is the very high level of these taxes that has tempted certain persons to seize upon them as if they were ripe plums, to be picked off while the picking is good. No other explanation seems tenable with respect to the apparently anomalous attitude being taken on this subject by representatives of the Federal Office of Price Administration, by certain farm and labor organizations, and by at least some commission people, whose viewpoint on this issue seems short-sighted, to say the least.

At the recent California commission hearing, Thomas Tarleau, formerly of the Treasury Department, testified as to the nature of these taxes. He had assisted in drafting the bills under which they are imposed, and he unhesitatingly declared it to be his view that there is no difference in kind between the income taxes of past years and those of today, the difference being solely one of tax levels. As to the so-called "excess profits tax," which some seem to consider a tax on "unreasonable" or "improper" profits, Mr. Tarleau testified that this tax was enacted *to raise revenue*, the term "excess" at no time during the consideration of the bill having been argued or deemed to signify anything insidious.

Of special importance is the fact that the level of earnings at which this tax commences to apply is not determined in the manner in which a rate base is determined for a utility, and Mr. Tarleau urged that since the tax consequences of otherwise proper ratemaking follow automatically, they should not be determinative from any sound viewpoint on the ratemaking process. They follow from other facts and are not themselves decisive of the issue of increasing or decreasing rates. This, thought he, was exactly what Secretary of the Treasury Morgenthau meant when he issued a recent statement on this subject, and Mr. Tarleau continued:

"If, in order to have a fair return to the investor and keep prices fair to the consumer, it means an adjustment in which excess profits will be lost (to the federal government), certainly the commission cannot do anything but its bounden duty to reduce rates. At the same time the fact that you won't pay excess profits taxes should not likewise prevent you from reducing rates. The excess profits taxes themselves have been a factor which has nothing to do with the ultimate result, so far as I see, of the return to the investor."

And finally, Mr. Tarleau said that if, in working on these bills, he had realized that this issue would arise he would have tried to devise a better term than "excess profits" for this tax. But the idea never occurred to him, and he testified that he felt sure that Congress, in enacting this statute, entertained no intent to impinge on utility rates. Indeed, he felt that its members would be the most surprised of all if they were now to be told that they had been, in effect, regulating utility rates when they passed this legislation.

But, some have said, the excess profits tax is really an "avoidable" expense and should therefore be "avoided," in the interest of the ratepayers. This issue arose in the recent *Detroit Edison Co.* case, in which the Michigan commission at first held the matter beyond its jurisdiction. The state supreme court, however, held that the commission should consider the issue, but said that the fact "that such profits exist may or may not demonstrate that the earnings of the utility are excessive," adding:

"The Commission should not require the utility corporation to reduce its rates for the period during which it has paid excess profits taxes, nor for a period during which it may be liable for such payment on accrued taxes. *It should take into consideration the usual elements of rate determination* as well as obsolescence and depreciation of capital assets due to any extraordinary situations arising out of war conditions such as the effect of unusual and heavy war time loads. . . . The public should not be required to pay rates that will yield an extraordinary profit to the utiilty *and the stockholders of the utility, on the other hand, are at all times entitled to a fair return on their investment.*"

The ordinary and usual principles of ratemaking were thus held to apply in such a case—which is certainly as it should be. But the court hinted that excess profits taxes were somehow "avoidable" and therefore to be considered by the commission, though it, of course, understood that such taxes are only "avoidable" as the result of rate reductions, and it certainly did not deem the mere "avoidability" of a tax the sole test of its propriety or impropriety as an operating expense, since it did not urge the obviously logical, but highly absurd conclusion, that all income taxes should be "avoided" by the simple expedient of reducing net income to zero. In fact, the court—as I see it—fully recognized that a decrease of taxes should not be deemed the primary aim in such a situation, but that such result is rather a by-product of fixing rates at reasonable levels. For this reason the court sent the matter back to the commission for further proceedings.

Of special importance is the fact that when the issue thus came for a second time before the commission, it did not act to reduce the company's rates by excluding excess profits taxes from operating expenses. In fact, it took a wholly different tack. On careful examination of the company's operations, it found that the company had set up as a postwar reserve around $1,500,000 more than seemed to it to be needed for that purpose. It, therefore, calculated that in order to reduce the company's net revenues by that amount, a gross reduction of some $10,450,000 in consumer rates should be required, recalling that out of every $7.00 taken from gross revenues the Treasury's take would be reduced by $6.00 and the company's net income by $1.00. On the basic tax issue, however, it declared significantly:

"The commission finds nothing in its review of the remanded case to justify the contention that all excess profits, or war taxes, should be wiped out arbitrarily. The question of whether all excess profits or war taxes should be channeled away from the U. S. Treasury arbitrarily when war production is largely producing those taxes, is of debatable equity. Should such a practice become general it would appear that eventually greatly additional burdens would have to fall on individual taxpayers."

This case is now pending once more in the courts, but the net result so far seems to be disapproval of the argument that federal excess profits taxes or any other income taxes should be disallowed *per se* as operating expenses. And the Michigan Supreme Court rightly recognized that a public utility must be allowed a residual fair return, regardless of the tax situation, and that the fundamental principles of ratemaking economies still govern.

I shall not dilate on those principles, save to say that it has long been the law that the return to be allowed a utility must "be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties."

This was the United States Supreme Court's ruling in the well-known *Bluefield Waterworks* case a score of years ago. It is a cold question of economic fact, and this very year the United States Supreme Court, in the much discussed *Hope Natural Gas Co.* case, reaffirmed this salutary doctrine, remarking upon the necessary balance that must be reached between investor and consumer interests, and adding that the return, after fixed charges:

"Should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital."

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disallowance of wartime taxes—as such—as operating expenses? It seems to me that it fully disposes of that issue. The dollars earned by a public utility do not come into the company's till in different colors, some to take care of the purchase of gas or oil or pencils, some to pay for labor, some to cover taxes and some to become return. They are all the same kind of dollars, and if some have to be paid out for taxes, including every kind and type of federal tax, there will be just so many less dollars left in the till, in the final analysis, to pay for labor and materials and to take care of those capital costs which must come out of "return" in order to maintain the company's credit position and to render certain its ability properly and effectively to perform its public functions.

Unless this residuum of adequate return is provided, service will assuredly suffer and the enterprise will inevitably fall. To deny or ignore this economic and financial axiom, and to say that the stockholders of a utility corporation, contrary to the necessary practices of every other sort of corporation, must shoulder this tax burden through reduced net earnings or dis-allowances of taxes as operating expenses is merely to bury one's head in sand.

If, therefore, upon usual and ordinary principles of ratemaking, a utility is found by a regulatory commission to be earning more than a fair and reasonable return, over and above its operating expenses, depreciation and taxes, the fact that tax savings will result from a reduction of its net return to more reasonable levels should not deter the regulatory body from performing its duty. But the mere fact that large tax expense is incidentally involved, although the residuary return is still no more than fair and reasonable, seems to afford no proper springboard for rate reductions, aimed at such taxes—as such—and, of course incidentally, harmful to the return which the utility must earn in order to carry on effectively its service to its patrons.

It has been suggested that, since the utility does not in any event retain excess profits tax moneys, a reduction in its gross revenues by the amount of such taxes would do it little harm, but would operate merely to transfer these dollars to the pockets of its consumers. In theory, this is, of course, correct, and as between the utility and its customers such action might be an expedient—provided we were to eliminate Uncle Sam from consideration. Of course, the tax is not 100 per cent but rather 85½ per cent, and the 14½-cent pieces thus purposely left to the company must not be overlooked. They are a part of the earnings on which judgment as to the fairness of its return is to be exercised.

In this connection I desire to point out two other highly pertinent factors. One is that we must somehow pay for this war, and if a given utility's rates have not been increased during the war, *on a unit of service basis*, the federal war income and excess profits taxes obtained by Uncle Sam from such a concern are in a sense "painless taxes," so far as the users of the service are concerned. They will at least *help* to pay for this war.

We should not overlook the fact that —as the Michigan commission stated in the recent Detroit Edison case—"The question of whether all excess profits or war taxes should be channeled away from the U. S. Treasury arbitrarily when war production is largely producing those taxes is of debatable equity."

For example, a study of the sources of increased wartime revenues recently made by one leading Independent telephone company discloses that only 20 per cent of such increase has come from exchange services, the balance, or 80 per cent of the total, having arisen wholly from toll service. Indeed, the local grocer, the laundryman, or the individual residence subscriber seems to have contributed relatively little to these increased revenues upon which the excess profits tax accrues.

On the other hand, by far the greater part of the increase arises directly from necessary toll calls made by those larger corporate subscribers who are engaged in war production. And, of course, the expense of such calls is being largely borne indirectly by the very government which is taking back most of these increases in earnings in the form of war taxes. Under such circumstances, it would indeed seem to be "of debatable equity" to deprive Uncle Sam of such taxes and instead to offer these sums by way of rate reductions to the general run of subscribers who have contributed only slightly, if at all, to the increases in revenue which give rise to the tax liability. And this is especially true since in most instances exchange rates rest today on the same levels that prevailed before these revenue increases from such war business began to accrue.

Moreover, we all know that it is much easier to reduce rates than to obtain authority to increase them. Even if we should wish to provide some method of giving consumers the benefit of such so-called "avoidable" tax savings, therefore, it would seem highly advisable to accomplish this end in some manner other than by the reduction of existing rates, as such.

In this connection, one alternative method that has apparently found favor in some instances has been to grant to customers a refund or rebate just before the close of the year to which the tax items are applicable, based on estimates of excess profits taxes which otherwise would become payable in respect to that year. By this means the customers obtain the benefit, but the integrity of the company's rate structure is maintained, so that when revenues go down after the war the enterprise will not be left stranded, with the necessity of increasing its rates and with all the administrative difficulties which that process entails staring it in the face.

In other words, if we are in fact convinced, in some particular instance, that such action is fair to Uncle Sam, this is apparently how it can be done with the least hazard to the integrity of the utility's rate structure and general status. Of course, great care must be taken, in making the tax estimates, not to provide for refunds to consumers which will exceed the tax reductions which will follow such gross revenue reduction. From all viewpoints, it would seem better to err on the side of conservation in such a procedure, and obviously it may be 1946 before a given company will know accurately what its 1944 excess profits tax may actually be.

Finally, the integrity of a rate structure is something not to be dealt with lightly, and every effort should be made to preserve it against the necessities of the lean years that may be ahead. Since taxes are exactly the same as any other necessary operating expenses, so far as the treasury of a utility is conserned, it seems highly important from all viewpoints to preserve the fundamental economics of this issue from short-sighted or unreasoning attack. Unless a utility—after paying out its taxes of every kind and description—remains in a position to attract new capital at fair cost, it cannot be expected effectively to continue to perform its services to its patrons.

Come what may, therefore, this minimum of residuary earning must be preserved, and to accomplish this is as much the function and responsibility of the regulatory bodies as it is of the management of utilities whose rates they regulate. The mere fact that wartime taxes are high should not be allowed to blind the eyes of anyone to the basic economic fact that unless such essential costs are fully covered by earnings, no public utility — nor any other business—can long maintain its financial integrity. The World War I

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notion that such taxes are "a charge on the stockholders and not the ratepayers" is as opposed to sound economics as the Supreme Court has ruled it to be contrary to law.

V V

Telephone Committee Urges Changes in WPB Orders

The Office of War Utilities announced, on September 28, the result of a recent meeting of the Telephone Operations Industry Advisory Committee of the OWU Communications Division.

The sense of the committee's recommendation was that restrictions now imposed on the resumption of manufacture of telephone instruments, now prevailing under WPB Order U-8, should be terminated as soon as possible, presumably with the ending of the European war.

The committee also urged elimination of certain restrictions in Orders U-2, U-3 and U-5.

U-2 establishes standards and procedures of operations for telephone communications; U-3 assigns AA-1 preference rating and the allotment No. U-9 for deliveries of maintenance, repair and operating supplies to the telephone industry and restricts inventory and purchase; U-5 restricts sale, purchase, rental or other commitment of wire communication equipment to orders rated AA-5 or better.

Eleven recommendations made by a special committee and approved by the entire Telephone Operations Industry Committee follow:

(1) Deletion from Order U-2 of all restrictions on replacements except those restrictions pertaining to replacement of interoffice communication systems with dial equipment and replacement of exchange manual central office equipment with dial equipment of more than 200 lines.

(2) Deletion from Order U-2 of all restrictions on additions of exchange central office equipment.

(3) Adoption of a revised WPB form to be used by doctors to certify persons who are entitled to telephone service because of illness.

(4) Increasing the amount of material that may be purchased for operating supplies under Order U-3 from $2,500 to $10,000.

(5) Elimination of the section of Order U-3 that necessitates listing of material for sale with WPB.

(6) Elimination of the provision in U-3 relating to the amount of maintenance, repair and operating supplies material that can be purchased on priority order.

(7) Changing the "sales of material between operators" provision in Order U-3 to permit any material to be sold between operators without a preference rating or allotment number.

(8) Elimination in Order U-3 of the provision requiring telephone operators to obtain authority to begin construction on projects in which the total cost of material is in excess of $5,000.

(9) Reduction of the list of communication equipment that is restricted by Order U-5 to the more important key items.

(10) Deletion from Order U-5 the requirement that manufacturers cannot accept orders unless they bear a preference rating of AA-5 or better.

(11) Consideration be given to revoking Order U-8 to eliminate paper work.

In making the last recommendation, the special committee said that under present conditions Order U-8 seems to provide no necessary limitations or controls on the manufacture of telephone sets that could not readily be exercised, if necessary, through other WPB orders or regulations.

The entire industry committee recommended retention for several months after "Victory-in-Europe Day" of the section of Order U-2 that designates the types of persons entitled to preference for telephone service.

V V

Signal Corps Develops Plan to Dispose of Surplus Material

The Philadelphia (Pa.) Signal Depot has developed, for the entire Signal Corps, the first Property Disposal & Demobilization Planning Division, which plan is now serving as the pattern for all other Signal Corps agencies of the Army, it was disclosed October 6 by Brig. Gen. A. A. Farmer, commanding general.

The depot was directed some time ago by the Chief Signal Officer to develop plans for the corps for the disposal of excess salvage and scrap materials no longer needed in Signal Corps operations.

The property disposal division was set up under the direction of Lieut. Col. Clinton J. Patche, who has served as a Signal Supply Officer in the Southwest Pacific, to handle the disposition of thousands of excess Signal Corps items.

While these items, most of which can be used in the communications industry, to date have been released only in small quantities, it is estimated that the Philadelphia Signal Depot will have $100,000,000 worth of such equipment for disposal within the next year.

Most of this excess material will be suitable for public use, such as millions of radio tubes, transmitters, receivers, tools, millions of feet of wire and cable, telephone poles, generators and porcelain coils and insulators. In addition, there will be thousands of tons of salvage and scrap material to be sold which are of no further use to the government but which have commercial value.

In the disposal of this property, the depot works closely with other Army procurement agencies, as well as with the procurement division of the Treasury Department, War Production Board and Reconstruction Finance Corporation.

A display of samples of all materials for disposal is maintained at the Depot Annex No. 1, 22nd and Lehigh Aves., for the inspection of prospective bidders. Disposition is accomplished by circularization of prospective purchasers, and bids are opened under the supervision of the director of property disposal division. In requesting bids, prospective bidders are advised of the location of the material and the time for its removal. Each bid must be accompanied by a 20 per cent deposit in cash, money order or certified check. Unsuccessful bidders will have their deposits returned within one day after awards have been made.

Colonel Patche stated that the depot will be glad to put any interested bidder on the list for circularization upon request. Personnel of the depot is excluded from bidding.

In normal scrap activities, bids are taken at regular intervals for sale of the monthly accumulations of scrap steel, brass, copper, wire, cable, waste paper, nail kegs, metal strappings and tin cans. In these sales, most bidding contracts cover periods of 90 days.

A demobilization planning branch within the property disposal division prepares plans, under supervision of Capt. Samuel Unger, for the demobilization of equipment and supplies on hand in various depots.

V V

Postwar Expansion Program Planned by Michigan Bell

A postwar expansion program by the Michigan Bell Telephone Co., Detroit, calling for expenditure of $120,000,000 over five years was predicted on October 3 by President George M. Welch.

The program calls for erection of 46 new buildings, placing of 13,500,000,000 conductor feet of exchange cable and 250 miles of long distance cable, and installation of more than 100 long distance switchboards, Mr. Welch said.

V V

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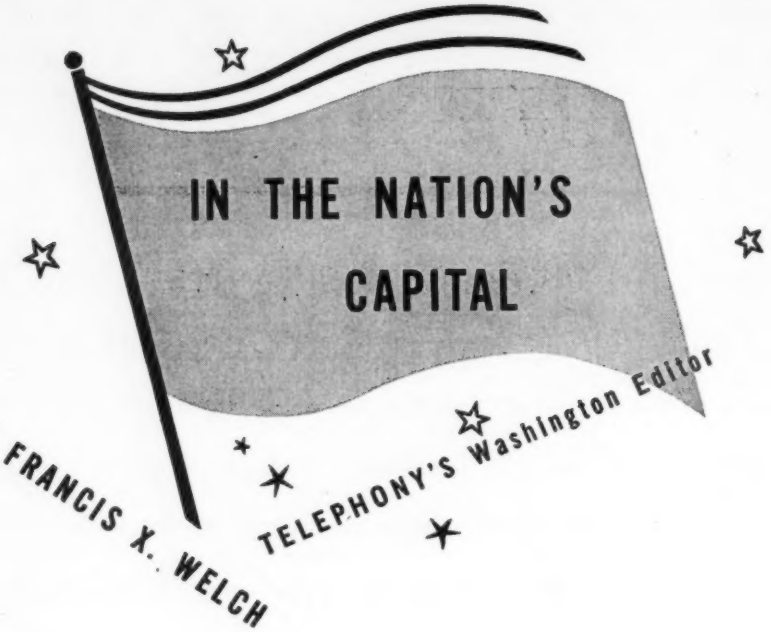


FCC Commissioner Durr's and Lowell Mellett's statements concerning the lack of telephone service to the farmers reviewed. . . . "Eligibles" for FCC vacancies listed. . . . Suggested appointments being held up to take care of some election casualties.

IT HAS BEEN nearly four years now since this writer first pointed to the danger of allowing the problem of getting telephone service to the farmers to remain unsolved in a lastingly satisfactory manner. The danger is not to the farmer who is eventually going to get telephone service one way or the other. The danger, to repeat an old story in this department, is to the telephone industry faced with the definite possibility of having the camel's nose of government ownership get under the tent of private enterprise at this particular point in the telephone business.

The danger of the telephone industry is not confined to companies serving rural or semi-rural areas, although they are likely to be first confronted with the problem. It is to the entire telephone industry, both Bell and Independent, and even those companies which confine their activities to serving a 100 per cent or nearly 100 per cent metropolitan area (if there be any such companies).

The farsighted report of the USITA Committee on Postwar Plans and War Activities, as given to the association's recent convention in Chicago, did not overstate the problem one bit when it said:

". . . Indications are that unless the telephone industry itself finds and applies the solution to the farm telephone problems, agencies outside of the telephone industry—perhaps governmental agencies — will undertake to do that. Already there are signs of such happenings."

The reason why your correspondent brings this up again is simply to document the words of wisdom which the USITA committee speaks, by giving the partial text of the "signs of such happenings" to which it refers: First of all, there was an address on September 20 by Commissioner Clifford J. Durr of the FCC to the Christ Church Forum in New York on the subject "Building for a Better World." In the course of his remarks, Commissioner Durr said:

"In 1920 nearly two-and-a-half million American farmers had telephones of some kind in their homes. In 1940 only a little over one-and-a-half million farm dwellings had telephone service. Thus, while the total number of telephones was increasing 35 per cent, the number of telephones on farms was decreased nearly 40 per cent. Three out of four of our farms and nearly four out of five of our farm dwellings are without telephone service of any kind today. . . . What shall we do about these stranded people of ours? . . .

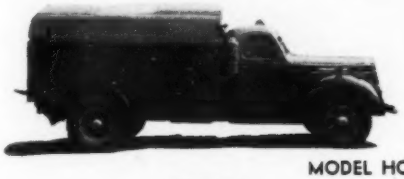
"While our farm telephones are declining, the number of farms lighted by electricity is steadily increasing. . . . Even if we are not interested in a TVA for the Danube and the Irrawaddy, what about a telephone REA for our own farmers?"

The second significant straw in this direction of the wind was a syndicated article by Lowell Mellett, published in a number of daily newspapers all over the United States on September 28. Before reading what Mr. Mellett has to say, it might be well to recall that he, as in the case of Commissioner Durr, is commonly regarded as being among the "inner circles" of the New Deal. (In other words, Mellett is not just another newspaper man sounding off. He is a former confidant of the New Deal who is quite likely to go back to government service after the election, if the New Deal is re-elected.) He is quite likely to be echoing things which he has heard discussed from time to time among some of the more intimate White House advisers.

Mr. Mellett's background is that of a writer and editor. He has proved himself able in both capacities. For some years he was editor of the Scripps-Howard paper serving the Washington, D. C., area, *The Washington Daily News*. He entered the government service to help establish the Office of Executive Information which has since become the Office of War Information, or OWI. Mellett ran

MODEL 4013-AL

MODEL MCW115



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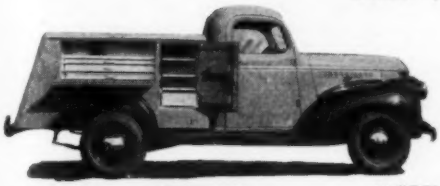

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IN YOUR X-DAY PLANNING

The Telephone Industry has its X-DAY problem, in varying degrees, in common with most of America's industries.

Good business practice requires as comprehensive a plan as possible—as early as possible.

The replacement of automotive equipment is usually a part of this plan and in this . . .

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With a complete line of light, medium and heavy-duty line bodies, as well as service and installation units, we are in a position to provide the definite information you want.

Many body types are available now; if you have the chassis.

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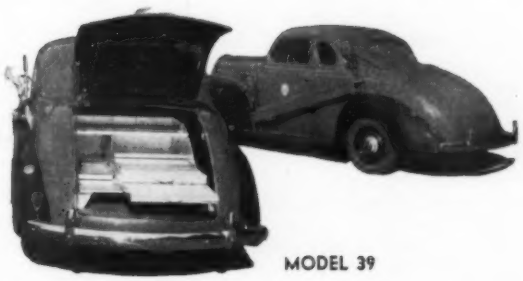

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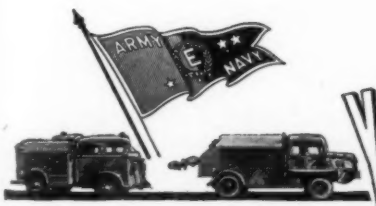

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BODY DIVISION

YORK, PENNSYLVANIA

into difficulties with his OWI activities, particularly because of his attempt to establish a great central clearing house for all government information. Hostile Congressmen viewed this as superimposing of another layer of bureaucracy and systematized government propaganda.

The large downtown office building which he advocated, still retains its slang name among Washingtonians as "Mellett's madhouse." It has since been turned over largely to other functions—principally the recruiting services of the Women's Army Corps. Mellett was succeeded in his OWI job by Elmer Davis, present incumbent, but he then became administrative assistant to the President, an important full-time White House staff post. Several months ago President Roosevelt mildly surprised one of his regular press conferences with the news that Mellett was going to leave the government service to write a syndicated news column. He (the President) wished him (Mellett) well. Since then it is commonly supposed that Mellett is more or less on "leave of absence" to write an administration-slanted column for the campaign.

After the campaign (if it has been a successful campaign from his point of view), it is also quite possible that Mellett will rejoin the government service, if not at the White House, then in some other capacity. He may even become a member of the FCC, on which there may be more than one vacancy in the near future. In view of the press-radio conflict on the FCC, it has long been suggested that a newspaper man would make a smart appointment.

Coming now to the article in question, Mellett proposes to hand out, free of charge, to both Governor Dewey and President Roosevelt a popular issue with which he thinks either or both could win many rural votes. It is "Phones for Farmers." He states:

"People in the cities will be astonished, I am sure, to learn that in the matter of rural telephones, this country has been steadily slipping for more than 20 years. Between 1920 and 1940 the number of telephones on farms decreased by 39 per cent. In 1920, 2,498-000 farms had telephones. By 1930 the number had gone down to 2,139,-000, and by 1940 to 1,527,000. In only one region, the Pacific Coast, was there an increase. When the census was taken in 1940—there are no later official figures—there were 5,661,894 farm dwellings without telephones, or 78.8 per cent of all the farm dwellings in the country."

He goes on to emphasize the special need which the farmer's family has for telephone service as compared with the average user. The American telephone system, "the most extensive in the world and most efficient," which has grown from less than 14,000,000 in 1920 to more than 20,000,000 in 1940, has made its expansion principally in cities, despite the decreased number of farms.

He admits that the telephone is bringing all America closer together—making everyone neighbors — except the farmers. He points out that in another respect, life on the farm has been suddenly improved. Farmers have more automobiles, radios, electric power supply—but fewer telephones. Mellett ventures his own explanation:

". . . Apparently it is partly due to the fact that small rural exchanges, mostly cooperatives, cannot be made to fit economically into the vast network of the present national telephone system. In any case there has been little in the rural telephone field to tempt the appetite of the Bell System. The AT&T would not continue to make its habitual 9 per cent, perhaps, if it brought all the farm telephones into its system and brought the rural service up to its own high standard.

"Yet surely something can be done and maybe REA has shown the way. It hasn't been so long since it was taken for granted that farmers couldn't have electricity, but now 38 per cent of all American farms have been electrified, 28 per cent of them in the last 10 years, thanks to REA."

Mellett recalls that a half century ago the federal government made a radical departure in postal service by introducing free rural delivery. A decade ago it moved into the area of rural electrification. Both adventures are popularly regarded as successful. He ends with this significant hint: "The same probably would be true if the government were to lend a hand toward ending the farmer's telephonic isolation."

* * *

Speaking of the persistent recurrence of the perennial rumors that Chairman Fly will resign, recalls the fact that President Roosevelt has not yet filled the FCC vacancy left by the expired term of former Commissioner T. A. M. Craven. Whether one or two appointments to the FCC are in the offing, here is a list—just for the purpose of the passing record—of the current crop of "eligibles" who have been discussed here and there as likely choices: Commissioner Clifford Durr to become chairman if and when Chairman Fly resigns (the President names the chairman of the FCC); Paul A. Porter, director of publicity of the Democratic National Committee; Julius A. ("Cap") Krug, now chairman of the War Production Board and former FCC aide; Leighton H. Peebles, chief of the Communications Division of the Office of War Utilities; J. Leonard Reinch, radio director of the Democratic National Committee; Rosel H. Hyde, veteran FCC attorney and assistant general counsel in charge of broadcasting; John D. Biggers, president, Libby, Owens, Ford Co. of Toledo; Edward Falck, director of the WPB Office of War Utilities, and Lowell Mellett, mentioned above.

That is a pretty generous list and your correspondent merely passes it along for what it is worth, with this note of caution: Whether one or two vacancies are to be filled in the FCC, the mere fact that they are being held open (along with dozens of other mysteriously unfilled openings in other federal agencies) suggests that the administration is accumulating a little backlog of plums to take care of some election casualties. Regardless of who wins the main bout in the election next month, it is pretty certain that the administration is going to be faced with a bumper crop of lame ducks.

Thus, if Senators Gillette of Iowa and Lucas of Illinois take a licking next month, which seems to be quite likely, they would certainly have a job priority on an appointment such as this over the above list. Further, this writer does not think it at all likely that Cap Krug would step down from the chairmanship of the WPB to take a $10,000-a-year membership on the FCC.

V V

Former Independent Telephone Engineer Awarded DFC

Maj. John A. Hensler, Santa Monica, Calif., a former engineer for the Associated Telephone Co., Ltd., recently was awarded the Distinguished Flying Cross for extraordinary achievement in aerial combat, according to announcement from an Eighth Air Force station in England, where he was stationed.

Major Hensler, a co-pilot on a B-24 Liberator heavy bomber, made 20 bombing missions over Germany and enemy-occupied Europe. He now is a squadron commander.

V V

Serves as Fund Chairman

FRANK E. WESLEY, Columbus, Ohio, service engineer for the Ohio Bell Telephone Co., is serving as chairman of the county division of the Community War Chest campaign from October 18 to November 3. Mr. Wesley and his 20 group chairmen head 200 volunteer workers of that division.

HUGH H.
EBY
INCORPORATED
18 W. CHELTEN AVE.
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Radio Channels In Telephony

(Continued from page 27)

ers may have REA power because of its greater utility.

(2) Many farmers have incomes so low that they cannot justify the small expense of a farm telephone.

(23) Some farmers in thinly populated sections of the country are located at such distance from existing telephone lines that it is not practical to serve them, even though they may desire and have need for telephone service.

Progressive telephone companies throughout the nation have done everything possible to sell farmers telephone service. They have conducted extensive campaigns for new subscribers, and they have pointed out the actual dollar savings in wear and tear on the family automobile that accrue from having a telephone. They would welcome any helpful suggestions from the FCC or others as to how they might better and more adequately serve rural areas. Certainly, the failure of farmers to be as enthused about telephone service as they are about power is not due to the fact that the quality of the rural telephone service is not up to standard. In fact, many areas in which the outside plant, the subscribers' instruments, and the operating service was the best in the country have suffered a substantial decline in recent years in the number of rural telephones served.

Commissioner Durr can be helpful to the rural telephone problem if he will recognize the fact that many farmers now living at remote distances from telephone lines might be served via special rural telephone radio links, if frequencies are made available. In connection with studies prepared by the telephone group, it is believed that 20 two-way radio channels would be adequate to provide service to those rural subscribers whom it is not possible to serve with wire lines in the average community.

Being practical telephone men, you will ask: "How much will a farmer's radio telephone cost?" "Over what distance would they operate?" "What is the minimum distance over which they can be proved-in over a two-wire rural line?" and "When would such telephones be available, if frequencies are allocated for this purpose?"

"Well, as to cost—your guess is as good as mine—I should think somewhere between $100 to $300. If there is a sizable demand for rural radio telephones which would warrant quantity production, the price would be much lower than if only a small number of sets were manufactured.

As to maximum operating distance, I would say on the average about 10 to 15 miles in level country; however, this could probably be increased when necessary by the use of antenna structures higher than would normally be required.

The minimum "prove-in" distance of a radio-telephone would depend on such factors as line construction costs, whether or not a pole line can be built on roads which are of the all-year type, etc. In general, I think the minimum "prove-in" distance might be around three miles.

Now, a word of caution. Don't regard the rural radio-telephone as a cure-all for your rural area problem. Consider it only as a future possibility, which might be useful in serving the farmers who cannot be reached by wire. There are many technical problems to solve before a radio-telephone with a satisfactory signalling system is perfected.

Recommended Radio Frequency Allocations for Telephone Service

Kind of Service	*Number of Channels Desired*	*Frequency Region*	*Width of Channel (KC)*
Special rural	20	151.075—154.00 MC	75*
	5	166.275—166.95 MC	75*
	6	169.125—169.95 MC	75*
	9	181.60 —183.30 MC	100*
Short haul toll	17**	30 —48 MC	40
	20	148 —151 MC	150
	20	163.2 —166.2 MC	150
	2**	210 —215 MC	120
Common carrier local area radio mobile	80	148 —154 MC	75
	90	163.20 —169.95 MC	75
	18	181.60 —183.40 MC	100
Common carrier extended area radio mobile	16	180.00 —181.6 MC	100
	16	183.40 —185.0 MC	100
Emergency service (telephone)	1	2186—2194 KC	—
	1	2722—2730 KC	—
	6	167.175—168.00 MC	75*
Emergency service (telegraph)	—	3189—3194 KC	—
Long haul toll channels	20	1900—2300 MC	20 MC
	20	4000—4400 MC	20 MC
	†	11,500—12,500 MC	—
Remote control telephone & telegraph circuits and short toll telephone circuits	—	156—162 MC	100***

Note 1. It is anticipated that situations might arise in which a telephone company would wish to use for long haul toll purposes the same frequencies assigned for short haul toll or special rural service. It is suggested that in allocating frequencies, telephone companies be permitted to use any short haul toll or special rural service assignments for long haul toll purposes, if the need should arise and, provided such use does not interfere with the normal purpose for which the frequencies are assigned.

*Assignments for this service only on every other channel in the frequency ranges shown.

**For use in the Territory of Hawaii only. These should include the following frequencies which are at present in use on the Hawaiian inter-island telephone system: 33600, 35200, 36000, 38000, 39600, 41000, 41800, 46200, 47300, 48400, 49500, 210000, and 215000 kc. in addition to six new allocations in the range 30-50 megacycles.

***Contemplates assignment of two adjacent channels in case of broad multiplex telephone systems.

†Not determined.

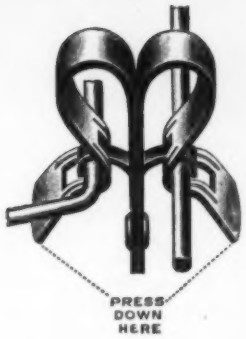
TABLE I

Allocation for Telephone Group

In considering the frequencies that would be most satisfactory for the vari-

FAHNESTOCK ELECTRIC COMPANY, INC.

No. 30 Test Connector



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● Tired of complaints that bridge or test connections to your lines cause noise because screw threads loosen? Or that they are hard to put on and the right tool was missing? Then use our time tested No. 30 Connector. Requires no tools. Vibration, heat or cold, rain or snow will not affect them as they are made of real bronze. They snap over (not threaded) any wire not over No. 8 B&S.

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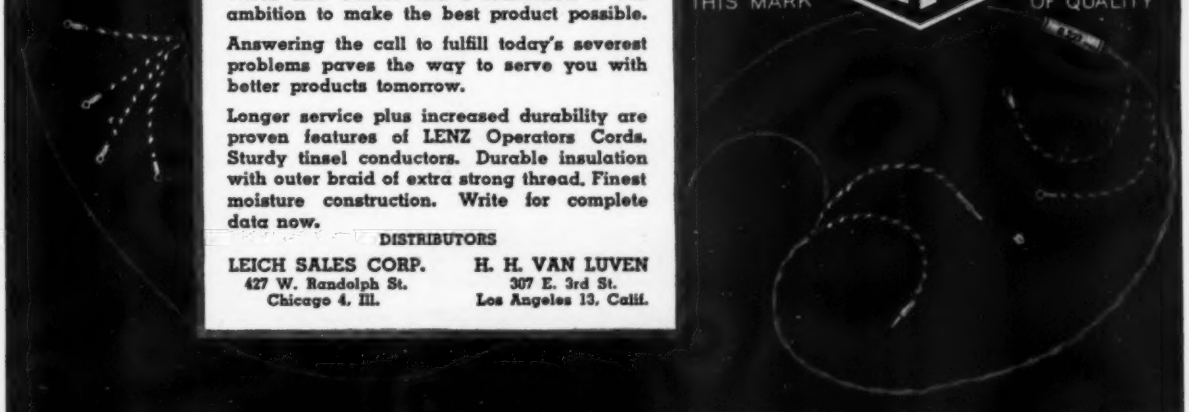

LENZ ELECTRIC MANUFACTURING CO.

1751 N. WESTERN AVE., CHICAGO 47, ILL., U. S. A.

"IN BUSINESS SINCE 1904"

ous services just discussed, it was recognized that channels in the range of 50 to 200 megacycles would be most useful in the mobile, rural, and short haul toll services. Channels within these bands would offer the advantage of somewhat greater transmission range for a given antenna height, than the higher frequencies, as they tend to bend and scatter more, due to difraction and refraction, than do the ultra high frequencies.

True "line of sight" frequencies would operate reliably only to, or slightly beyond the horizon and this would impose severe problems, particularly in hilly country if they were used for rural or short-haul toll service. In connection with long-haul toll involving repeater stations where it is possible to locate the relay equipment on high points in order to get a line of sight transmission path, frequencies in the range above 1,000 megacycles were recommended.

For emergency service, two low frequency channels above the upper end of the broadcast band and six channels in the 50 to 200 megacycle band were recommended.

In addition to our suggested allocations for the proposed services which radio channels would permit us to render, we have also suggested that a number of frequencies in the region above 1,000 megacycles be assigned the telephone industry for experimental purposes.

The frequency allocation recommendations which we have made to the FCC are shown in Table I.

It will be noted that we propose certain of the frequencies be shared by the several common carrier services. For example: The range 148 to 151 MC would be shared by urban mobile and short haul toll, the range between 151 and 154 MC by urban mobile, harbor, and rural subscribers, etc.

This frequency sharing should not handicap the development of the various services as it is unlikely that there would be maximum demand for all of the channels in each of the shared services in one area.

V V

Chicago Editor Reviews Welch's Radio Frequency Article

The report of the present hearings concerning allocation of radio frequencies before the Federal Communications Commission, as given in TELEPHONY of September 30 by Francis X. Welch, Washington editor, was reviewed by Herman Gastrell Seeley, the financial editor of the Chicago *Daily News* on October 9.

Mr. Seeley is well-known for his interest in the telephone industry and he has quoted TELEPHONY in several of his articles during the past few years.

In his recent article, he particularly stressed the need, as outlined by Mr. Welch, of radio frequencies by the telephone industry in developing the use of radio in rendering telephone service.

V V

Old Checks Converted to Pulp

Tons of old, canceled checks were recently sent to a paper mill from the New York City headquarters building of the New York Telephone Co. and converted into paper pulp to help relieve the shortage.

V V

Bell Profits are Low

Net profit of the Illinois Bell Telephone Co. from current operations in the last two years has been the lowest in over 20 years in percentage of total revenue received from customers.

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2000 TYPE

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SB	SAH	SBN	SCT	SDT	SEY	SGF	TM	TBN	CV	CBE	CCQ	CDR
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SE	SAN	SBX	SCV	SDX	SFC	SGJ	TY	TBU	CZ	CBJ	CCV	CDX
SF	SAP	SBZ	SCY		SFE	SGK	TZ			CBM	CCW	
SH	SAQ		SCZ	SEA	SFL	SGO		TCJ	CAA	CBQ	CCY	CEA
SJ	SAY	SCA		SEB	SFM	SGT	TAL	TCS	CAB	CBY		CEB
SK		SCB	SDA	SEK	SFQ		TAT	TMF	CAE		CDC	CEC
SL	SBA	SCC	SDD	SEM	SFS	TB	TAU		CAH	CCC	CDD	CEH
SX	SBB	SCD	SDE	SEN	SFU	TC	TAV	CB	CAJ	CCD	CDF	CEM
SZ	SBC	SCH	SDF	SEP	SFV	TD	TAX	CD	CAM	CCE	CDG	CEQ
	SBG	SCN	SDG	SEQ	SFW	TE	TAY	CF	CAQ	CCF	CDL	CES
SAC	SBK	SCP	SDH	SET	SFY	TF		CJ	CAR	CCG	CDM	CEY
SAD	SBH	SCQ	SDJ	SEU		TG	TBK	CM	CAT	CCJ	CDN	
SAG	SBM	SCS	SDQ	SEV	SGE	TJ	TBL	CU	CAW	CCN	CDP	CDB

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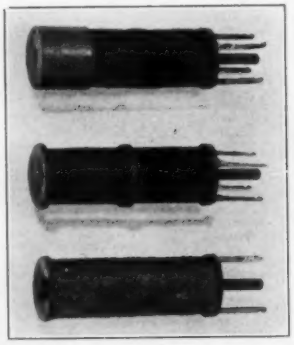
2002	2003	2004	2006 2043	2007 2046	2019 2048	2020 2064	2021 2077	2023 2089	2027 2091	2029	2031	2037

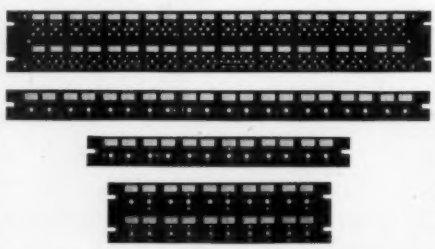
MOUNTINGS

1000	1001	1002	1003	1004	1005	1006	1007	1008	1013	1014



Any Combination of Coils and Spring Assemblies Listed Above Are Available Mounted or Unmounted. Spring Assemblies Not Listed Can Be Built Up. Repair Parts, Covers, Etc. Also Available.

Prices Quoted On Receipt of Your Specifications.



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THE DESICCANT DRYING METHOD *and* PROTEK-SORB* desiccant

The Nation's outstanding telephone companies and the U. S. Signal Corps employ the desiccant-drying method. It is easier, faster, safer . . . more satisfactory in practically every way—than outmoded and dangerous "boiling-out."

Prominent among the materials used by these two war-vital services, you'll find PROTEK-SORB desiccant. Over a period of years, PROTEK-SORB desiccant has proved, in actual field service, that its maximum capacity for moisture, its scientifically-processed small mesh size, are important factors in results obtained. Splices dry faster, normal insulation resistance is restored quicker. Insulation and metals are not affected because PROTEK-SORB is chemically inert and non-reactive.

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No. 329, capacity 15-tons, height 37¾", lift 22".

Also available is Simplex No. 322 Cable Reel Jack for paying out cable faster and safer. Broad "T" base insures a firm non-rocking foundation anywhere.

Ask for new Catalog No. 44.

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The snow-white granular **DESICCANT** is neither poisonous, corrosive nor abrasive, and does not evolve gas, fume or odor either in storage or in use. It eliminates all chance of fire, accident or discomfort to workmen or occupants of buildings.

STANDARD PACKAGES

⅛ Pint Can (50 grams) 48 per Carton.
½ Pint Can (200 grams) 12 per Carton.
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For sale by the Manufacturer and leading telephone supply houses.

W. A. HAMMOND DRIERITE COMPANY
XENIA, OHIO

A Conversion to Dial Operation

(Concluded from page 29)

the battery side of the line on the No. 1 connection of the telephones. When all the telephones on a line were wired the same way, the jingle disappeared. We had also made the mistake of using 30-cycle ringing current on the rural lines, which did not work as well as the 16-cycle current. When these two things were remedied, everything went like clock work and little or no difficulty has been experienced since that time.

I will add, just as a matter of information and as an indication of the public acceptance of this new service, that we now serve 1,628 telephones of the following classifications: 184 B-1, 30 B-2, 149 R-1, 629 R-4, 83 R-x, and 524 rurals, which is a net gain of 127 since starting the project. In addition to this gain, we have 60 held orders for telephones as soon as they become available. This gain in stations was made in spite of an increase in rates amounting to 75 cents per month on business telephones; 50 cents per month on residence telephones, and 25 cents per month on rural telephones, not to mention the additional tax.

After having gone through a conversion of this sort, I would say that the following problems would probably be the most important to consider:

(1) *Commercial:* The determination of whether a conversion to dial is practical, and if so, getting public support and approval of the change, because, after all, the public must be satisfied in order to make a success of any telephone company.

(2) *Central Office Equipment:* In ordering central office equipment, care should be taken to get sufficient facilities to take care of the present, as well as the anticipated service requirements. This can be determined if proper study is made of each individual situation.

(3) *Outside Plant:* Care should be taken, before a conversion, to have the outside plant in good condition. This work, however, should be done regardless of whether a conversion is contemplated or not, because it is impossible to give good service with a rundown plant.

We have noticed that trouble shows up more quickly on our outside plant than it did previously when we were using magneto equipment in the country, but I believe this to be a blessing in disguise. We now get out on the lines and fix them up as soon as trouble develops, thus maintaining a higher grade of service with less interruption. In a check of trouble cards for the first six months, I found only 14 cases of rural line trouble reported, which is a good indication that most of the trouble is fixed before the subscribers discover there is anything wrong.

In conclusion, I would like to say that, if any of you are considering a change to dial service, there is nothing to worry about if care is taken in selecting the proper equipment to fit your particular needs, thoughtful work done on the outside plant and subscribers' station equipment, and the proper approach made to the subscribers.

Neither I nor any of the men in our plant had any previous experience with automatic equipment, but we are getting along with it nicely and have been able to remedy any of the troubles that have developed since the cut-over last year.

v v

MR. AND MRS. FRED MEIER, operator and lineman, respectively, at the Oran (Iowa) Mutual Telephone Co. resigned recently.

As

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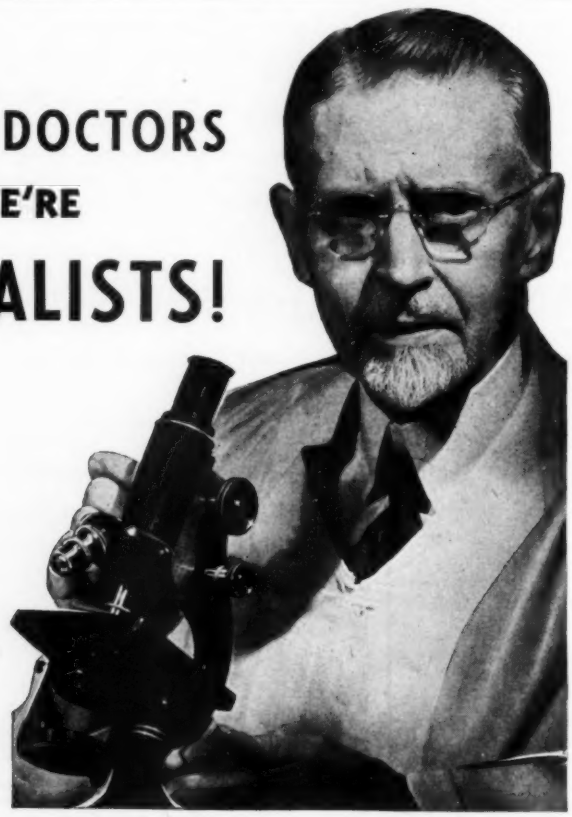
SPECIALISTS!



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Anyone with a screw-driver and a pair of pliers can tinker . . . but . . . 18 years rebuilding and repairing telephone apparatus have earned for us the reputation of "SPECIALISTS."

If you desire quality at its best yet priced moderately, write us your problems.

DAN'L H. McNULTY, President & Manager

TELEPHONE *REPAIR* & *SUPPLY* COMPANY

'Since 1926'

Rogers Park Station, Chicago 26, Illinois

Preventive Cable Maintenance

(Continued from page 32)

can be made by using sag gauges. Slack guys, broken poles and changes in the height of the attachment of the cable to the poles cause change in strand tension. To slacken off or tighten a messenger requires that all bonds, lashing supports and grade clamps be removed, that the suspension clamps be loosened and lubricated, that the cable rings at the pole be moved, that false dead-ends be released and, as an added precaution, the top strap on the cable terminal stubs should be removed.

Such a process should be confined to relatively short sections, as it is generally difficult to make the strand run freely through the suspension clamps, especially when supporting the larger size cables. Again, it should be emphasized that the time to prevent this source of trouble is when the installation is made.

Protection. Third ranking in the points to check is protection. There are different schools of thought as to how adequate protection of the cable, especially from lightning damage, can best be accomplished. I do believe that it is a matter to which much study should be given at present because of the change from ring supported to lashed cable and changes in the type of power construction and the continued extension of power lines. Often a method of protection which may prove successful in one area may not be successful in another, due to different soil and power conditions and the type of construction used. The following suggestions are made:

(1) An adequate low resistance central office ground is required. All cables entering a central office building should be bonded together inside the building and grounded to the central office ground.

(2) The sheaths of all the cables should be bonded in each manhole.

(3) A bond between sheath and strand should be placed at every 10th pole of aerial cable and at the first pole on each side of an underground dip or trolley crossover.

(4) Where two or more cables are on the same pole line, but are not supported from the same suspension bolt, they should be bonded together at the same point where their respective sheaths and strands are bonded.

(5) The sheath continuity of aerial cable should be maintained by bonding the sheaths together to the strand on each side where taped openings occur. Three or four cable pairs twisted together are not adequate bonding. A suggested form of temporary bond is to use a piece of bonding ribbon with a pipe ground clamp sweated to each end and attach the ground clamps to the sheath on each side of the taped opening.

(6) The sheath and strand should be bonded where the ground wire from a protector mounting or terminal is connected to the strand.

Grade clamps are normally acceptable in lieu of bonds, but the effectiveness of some of the newer types of grade clamps which have such a small bearing surface on the sheath might well be questioned. The need for bonding cable supported by spinning may be questionable, but considering the small cost it appears advisable as an added precaution.

I, personally, belong to the school of thought that protected cable terminals should be effectively grounded to a ground electrode at the pole, and that such grounds should be tested at least once a year. Such inspection can easily be made by an unskilled workman by means of a direct reading ground re-

— don't overlook the importance of GOOD TOOLS!

WHEN you get the green light to resume operations on a normal scale, be prepared with tools that will take you out of the "traffic jam" at top speed—and at lowest cost. Among such tools are Vacuum Grip Pliers, engineered to back the skill of the lineman and electrician with swift and telling precision. Time savers that help to make man-hours more productive, and to put tough jobs through faster. Easy on your small tools budget—their long life cuts down pliers expense. In every way, immensely important to your post war program.

Made by the FORGED STEEL PRODUCTS CO. Newport, Pa. — and made RIGHT!

There's no better time than now to get acquainted with these famous pliers. Hand this advertisement to your Purchasing Agent and instruct him to write us for details of our

30-DAY TRIAL PLAN.

Vacuum Grip Pliers

sistance megger. A recent inspection of such grounds, by a certain company, revealed that only 20 per cent of them were adequate. Further, I subscribe to the thought that all exposed open-wire lines over one-quarter mile long be protected by an adequate type of discharge block protection located at a point approximately 500 to 1,000 ft. from the end of the cable and effectively grounded.

Tree Clearance. Next in the order of importance was listed tree clearances. Tree growth, interfering with cable plant, will cause the bunching of rings, chafing and wearing of cable and, under some conditions, the excessive vibration of the strand and cable will cause ring wear and crystallization. It is generally assumed that the cable is adequately protected if tree guards are used. Actually the cable is protected against chafing and wear by actual contact with the tree, but often the movement of the tree in the wind will cause it to beat against the guard and cause excessive ring wear and crystallization. Such interference can frequently be cleared by the raising or lowering of the cable or the use of cable arms. The use of the wire spinning method of supporting cable permits the ready use of molding, placed over both the strand and cable for protection against small tree growth and underbrush.

In the inspection of aerial cable plant there are many items other than those referred to above which should be checked, namely, power clearances, pole stepping, sleeve lashing, terminals, clearances over streets and alleys, etc.

The inspection of underground cable has not been touched upon as the exchanges of many companies are served wholly by aerial cable plant. If underground plant is in service, it is suggested that the following be inspected:

(1) In manholes: Bonding of cables; support of cables on racks; need for shields at duct entrances; debris in the manhole, and the sealing of vacant ducts.

(2) At underground risers: Strapping of cable to the pole; cable guard in place and duct sealed around cable. Periodic electrolysis tests should be made in exchanges having trolley or interurban service. Electrolysis has also been encountered in the vicinity of gas and oil pipe lines.

The arc welding method has proved very effective in the repair of cable sheath damaged by ring wear or cutting. The following precautions are suggested when this method is used:

(1) If the sheath is worn through, do not weld the cut as moisture may be sealed in the cable.

(2) If, after the cable has been welded, it remains suspended in rings, there has often occurred sheath breaks next to the point of welding, but if the cable is supported by spinning, no such trouble has occurred. The condition and type of sheath, as well as the ring spacing, will affect the number of breaks occurring in the ring suspended cable.

(3) The ring cut must be well-cleaned and tinned in order to obtain an effective weld.

Many practices and procedures which should be made a part of a cable inspection and maintenance program have been omitted as time does not permit their inclusion. Just like all the other preventive measures, we find that the extent and degree of work required to maintain a cable plant in good operating condition depends upon the care used in making the original installation. In other words, the prevention of trouble in a cable plant begins with the construction of that plant, and its inspection should start the day after it is completed and continue at reasonable intervals for the remainder of its life.

V V

AT&T Announces World-Wide Telephone Total, 49,742,500

The world-wide total of telephones is about 49,742,500, according to latest available statistics and estimates announced by the American Telephone & Telegraph Co. In a few cases, notably Germany, Russia and Japan, prewar figures are used.

The United States had 26,831,000 telephones as of January 1, 1944, and North America, as a whole, 28,407,900. South America has 1,131,650. All of Europe, including Russia, has 16,629,000, a figure partly made up from data several years old.

With 19.3 telephones for every 100 persons in its population, the United States is considerably ahead of any other country in this measure of development. Sweden is next with 16 telephones for each 100 population. Canada is third with 14.

New York City, with more than 1,900,000 telephones, has the most of any city in the world. Chicago comes next with 1,151,700 as of last January 1. London holds third place with some 1,100,000.

In number of telephones per 100 population, New York City with 27.2 ranks below many other cities of the United States. San Francisco has 44.1 telephones per 100 persons; Washington, D. C., has 39.5, and Minneapolis, Minn., has 36.7.

There's No Need To Worry About The Signaling Service with SUB-CYCLE Installed

Sub-Cycle, over a long period of field service under many and varied conditions, has proved to be a most dependable and satisfactory source of ringing current.

Once you've installed Sub-Cycle you appreciate the fact that in it there are no moving parts, nothing to adjust, and that it requires no routine maintenance.

You'll be delighted with the highly efficient, quiet, economical, signaling service that Sub-Cycle will deliver. You'll declare, as have hundreds of others, that as a Ringing Converter Sub-Cycle is unsurpassed.

MADE IN 6 MODELS for loads from small PBX to large central office. Built for heavy duty. Output capacity 7½ watts to 40/50 watts.

ALSO PULSATORS

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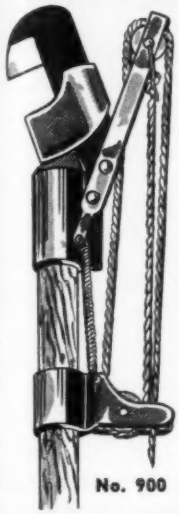
Sold by Leading Distributors

THE LORAIN PRODUCTS CORPORATION
LORAIN, OHIO

THE TOOL THAT DOES A BETTER JOB

LET **NEWMAN** SOLVE YOUR LINE CLEARANCE PROBLEMS



No. 900

PRODUCTS

Pole Type Tree Trimmers
Pole Type Tree Saws
Pole Type Paint Brushes
Pole Type Weed Cutters
Hand Pruners
Tree Paint
Tree Banding Material

Manufactured By

NEWMAN MFG. and SALES COMPANY
205-07 Westport Road
Kansas City 2, Mo., U.S.A.

SOLDERS
FOR EVERY PURPOSE

The Gardiner Line of high quality solders offers a complete service—there is a solder especially made for each particular type of telephone work.

Some of the more important kinds of Gardiner Solder used in telephone installation and maintenance are:

Acid-Core Solder for iron lines and lead-ins. Made in various gauges and with a scientifically uniform flux. Standard gauge No. 11, about 1/8" diameter.

Flux-filled solders, available in 1, 5 and 20-lb. spools.

Rosin-Core Solder for switchboard and other delicate work where absolutely non-corrosive solder is essential. Standard gauge No. 13 about 3/32" diameter.

Bar solders made in various alloys.

Bar Solder, Wiping Solder, Ingot Lead and Lead Sleeving are all made of the best materials and to meet most every need.

Low prices are assured because all Gardiner products are made by the most modern methods and in large volume. Insist on Gardiner. Your jobber will supply you.

Gardiner METAL CO.

4865 S. CAMPBELL AVE. CHICAGO, ILL.

Established for over 42 years.

RAY-O-VAC
Telephone Dry Batteries

On the Front Line Here At Home!

Maintainence men spear-head the attack to keep lines open for vital war production messages, fighting to save precious minutes . . . when they count. Their materials, too, must be of top caliber, for fewer service calls save time.

We are proud that Ray-O-Vac telephone dry batteries are chosen by telephone companies to fit into this program of top service maintainence. Ray-O-Vac telephone batteries meet the high Ray-O-Vac standards of longer life, insuring fewer replacements and lower service costs.

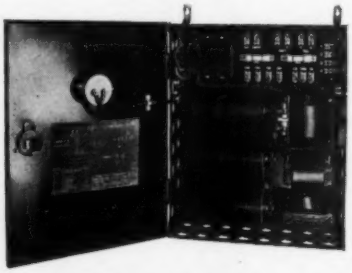
ARMY-NAVY E

RAY-O-VAC

BUY WAR BONDS
BUY WAR STAMPS

FLASHLIGHTS • BATTERIES
MADISON, 4 WISCONSIN

REPLACE BATTERIES WITH



ELECTROX RECTIFIERS

- Electrox RA Battery Eliminator for all lamp signal and automatic switchboards.
- Provides constant, humless voltage output thru automatic magnetic regulator. No adjustments required. Plug in and forget it. Built to serve indefinitely.
- Individual units or complete sets for telephone, telegraph, signal service, etc.

Electrox PA-05004 with power-off relay, for operator's circuit on magneto switch boards. Low first cost; low operating cost.

KEEP YOUR BATTERIES UP

with Electrox Battery Chargers—for trickle charging telephone batteries, or, (automatic), for exchange batteries.

See your jobber or distributor, or write direct to factory

SCHAUER MACHINE COMPANY

2057 Reading Rd., Cincinnati 2, Ohio

President and Vice Presidents Elected for Bell Laboratories

Dr. Mervin J. Kelly, director of research of Bell Telephone Laboratories, was elected executive vice president of the laboratories, it was announced on October 1. Dr. Kelly has made substantial contributions to photoelectric cells for sound pictures; to the water-cooled tubes widely used for high-power broadcasting, and to the vacuum tubes which make long distance telephony possible.

M. J. KELLY

He graduated from the University of Missouri in 1914 and received his Ph.D. from the University of Chicago in 1918. In that year he entered the laboratories as a research physicist. He became vacuum tube development director in 1930 and director of research in 1936. Dr. Kelly has had charge of Bell Laboratories development in radar and other important fields. He is an adviser to the government on technical war projects; a fellow of American Institute of Physics, American Institute of Electrical Engineers, Institute of Radio Engineers, Acoustical Society of America, and a member of the Directors of Industrial Research.

Alva B. Clark and Dr. Reginald L. Jones were elected vice presidents of the laboratories.

Mr. Clark was graduated from the University of Michigan in 1911, then joining the American Telephone & Telegraph Co.

During World War II, he has been primarily responsible for the laboratories' work on Signal Corps communication equipment. He recently made an extensive trip to the European battle fronts to observe that equipment in action. Mr. Clark is a fellow of American Institute of Electrical Engineers, Acoustical Society of America and American Association for the Advancement of Science.

Dr. Jones graduated from Massachusetts Institute of Technology in 1909 and received the D.Sc. in 1911. In that year he took up research in Bell Telephone laboratories.

During World War I, he was a captain in the Signal Corps. Dr. Jones is a fellow of American Institute of Physics, American Institute of Electrical Engineers, Acoustical Society of America, and American Association for the Advancement of Science.

Elected to the board of directors of the laboratories were Dr. Kelly and O. B. Blackwell. Formerly vice president of the laboratories, Mr. Blackwell on October 1 became assistant vice president of the American Telephone & Telegraph Co.

V V

Stockholm-Berlin Telephones Cut

Almost all telephone communication between Stockholm, Sweden, and Berlin, Germany, remained shut down 36 hours after the first interruption in service, it was reported on October 9. No explanation was given for the unprecedented break in communication.

V V

Honored by War Department, Returns to Indiana Bell

William A. Hughes, vice president and general manager of the Indiana Bell Telephone Co., recently returned to Indianapolis after heading the Industrial Personnel Division of Army Service Forces Headquarters in the War Department for five months.

He was awarded the emblem for exceptional civilian services, the highest honor the War Department can confer on a civilian employe. The citation commended his services in assisting in the solution of labor relations and manpower problems.

V V

Indiana Companies Incorporated

Two telephone companies recently were incorporated in Attica, Ind., with identical incorporators, according to papers filed with the Indiana Secretary of State. They are the Coal Creek Telephone Corp. and the Wabash Prairie Telephone Corp. Each has an initial capital stock of 100 shares with no par value. The incorporators are John T. Detchon, Mildred M. Miller and Blanche J. Oakaley.

Lightning Protection

(Concluded from page 24)

or 10 poles, depending on the breakdown of the soil. In this case, the voltage from core to sheath of a full size cable would be about 1,600 volts, as compared to 2,300 volts if no gaps were used, or about 3,000 volts if no pole protection wires were installed. The optimum gap length for a low earth resistivity (100 meter-ohms or less) area is about 12 ins. and about 24 to 36 ins. for high earth resistivity areas. In areas where a wire fence is in the vicinity of the pole protection wire, the fence should be regarded as ground and the gap in the pole protection wire should be placed above the top wire of the fence.

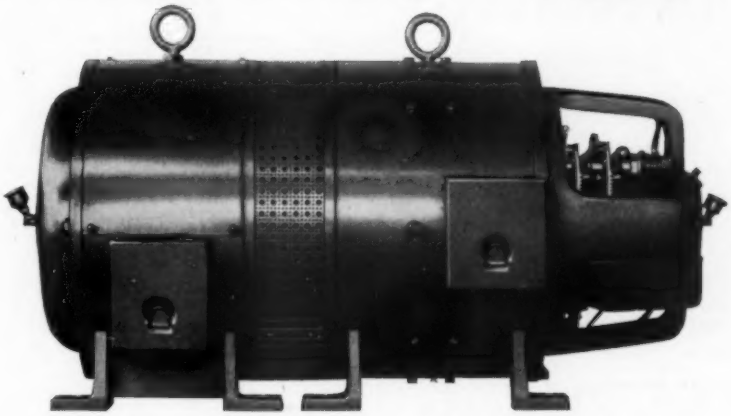
While guys provide sheath grounds in much the same manner as pole protection wires, the number of guys is comparatively small and gaps in them do not seem justified at this time.

Additional protection can also be provided by the addition of aerial or buried shield wires. This is especially true for the small cables. For instance, with a cable one inch in diameter, a shield factor of .63 is obtained by the use of one shield wire or about .48 by the use of two shield wires. However, this method of protecting the plant is rather expensive, and not too attractive at this time.

It might be mentioned, however, that when an aerial cable is installed under an existing open wire line having 10 or more wires, this open wire line will provide considerable shielding. In case of a lightning stroke to one of the wires, a very high potential is developed between it and other wires, as well as to the sheath. Arcing will generally take place and the current will divide among the various paths, the other wires taking the somewhat larger share. The inductance of a cable sheath about 1.5 inches in diameter is about the same as two adjacent open wires in parallel so that for a 20-wire lead, the sheath current will be about 10 per cent of the total stroke current, which would necessarily have to be handled in the absence of the open wire.

Due credit is given the engineers of the General Electric Co. and the Bell System from whose papers most of this data has been obtained.

For Dependable Exchange Battery Charging—



Install the

DIVERTER POLE MOTOR-GENERATOR

Because . . . .

The Diverter Pole Motor Generator provides inherently all the characteristics essential to insure peak performance from the Battery.

Over thirty years of actual service in hundreds of installations has demonstrated, to users, the dependability, economy and high efficiency of the Diverter Pole Motor Generator as a battery charger. Completely automatic it eliminates any manual attention of the charging.

Specially designed, carefully constructed, and thoroughly tested within precision limits, the Diverter Pole Generator insures constant exchange voltage within very close limits for 24 hour service — provides all exchange load requirements — insures a safe continuous floating charge to the battery — protects itself against dangerous overloads and is both electrically and mechanically quiet in operation.

DIVERTER POLE CONSTRUCTION

These are but a few of the many reasons why users of The Diverter Pole Motor Generator have found it the most economical, trouble-free equipment for charging Telephone Exchange Batteries and why it will pay you to investigate and learn how the installation of this battery charging equipment will prove a most profitable investment.

Write for Bulletin No. 96

The Electric Products Co.

1727 CLARKSTONE ROAD · CLEVELAND 12, OHIO

"Hours Saved on the Job and I'm not Tired!"

That's the experience of war workers everywhere when they use these Bernard Nippers.

BERNARD
TRADE MARK REG.

No.177—5½"
Diagonal Side-cutting
NIPPERS

They give
MORE
POWER
TO
YOU!

Super-powerful leverage, keen hardened jaws cupped for greater clearance. Self-opening spring handles. The perfect aid to fast production.

Send for catalog of the Schollhorn line of BERNARD tools.

THE WM. SCHOLLHORN CO.
TELEPHONE TOOL DIVISION
420 Chapel St. New Haven, Conn.
Exclusive Makers of BERNARD Parallel Action Tools

Advertising's Opportunity

(Continued from page 36)

ceed if we all support it and participate in its program. I want to add that if you decide to patronize the advertising institute, you will get a lot for your money. In fact, nowhere —and I say this advisedly—nowhere can you get so much for so little. If you haven't already done so, I suggest that you at least investigate what the advertising institute has to offer you.

Many are the rules that have been laid down for success. The one most simply expressed and the one which I like best has been suggested by T. E. Green, general commercial manager of the Cincinnati Bell. It prescribes just three steps:

> First, knowing what we are trying to do!
> Second, knowing how to do it!
> Third, getting on with it—pleasantly!

And as for getting on with it pleasantly, I recommend to you the judicious use of that formula which combined intelligently the power of suggestion and the psychology of print. The name for it is *ADVERTISING.*

During World War II, we have seen how potent advertising can be in the promotion of the sale of war bonds, and in the promotion of Red Cross banks, waste paper salvage campaigns, and in various other promotional activities so necessary to a successful conduct of the war on the home front. In short, advertising has helped to win the war. I have said it can be used to help win the peace. Further than that, I see it as the most highly efficacious instrument in preserving the thing we have all been fighting for, which we call Democracy. And do not be deceived, Democracy will not have been saved for us when the military part of our fight has ended. Through the medium of advertising we can say to the men and women of America, "Here it is, folks. It is your America and it is my America. It is our America. It is an America worth fighting for and worth living for. It is worth doing things that are truly great."

Most of us think we know what Democracy is. Sometimes I have not been quite sure. For an illustration of what Democracy means, I am indebted to Dr. Allen A. Stockdale, who relates that, "When Bishop Hughes was president of DePauw University, there came to DePauw one of the awkwardest looking greenhorns that ever came to college. He had about three acres of hands and legs that he did not know what to do with. He had continued to grow until he was 6 ft. 3 ins. tall, but his shiny, pea green, Sunday best suit had not grown as he did, and he had grown right out of it.

"This awkward lad came to college. He had a good father and a good mother that wanted him to succeed, but they could not give him money. They lived on a slanting farm somewhere in the West. One evening they were sitting at the table and the boy said to the father: "I fell off the farm three times today."

That was the kind of a farm it was. How could they get ahead on a farm like that? They could not, but this fellow was going to have an education.

"So he came to DePauw University, and he soon found what a hot iron and a damp cloth could do to his breeches, and he got a crease in his trousers. (Nowadays all he would have to do would be to throw away his garters and let his socks fall, and he would be a typical college boy.)

"But he got a crease in his trousers, and it was not long before the girls discovered him. He soon had enough dates to pass them around to the other boys. Then they discovered that he had what it takes on the gridiron, and in the classroom. And this awkward greenhorn became a cultured college gentleman.

"He was chosen as the honored speaker on commencement day. Early Monday morning of commencement week, when the train stopped at the depot, two of the funniest folks you ever saw got off. The old man had an accordion suitcase. He would just put everything in it and never get the blooming thing full. And the dear old lady had on an old-fashioned dress. But this boy did not care. *They* were his father and his mother.

"He picked the little lady up in his arms and he kissed both her cheeks and he took them up and introduced them to Bishop Hughes, and to all of his fraternity brothers and girl friends. That was his father and his mother. They had been the creators of his very life. They had given him his heart and soul and spirit and inspiration, and he was not ashamed of them, no matter how they looked, or the way they were dressed.

"And then came that great address on graduation day, and he held that audience spellbound, and in the silence that fell over them when he was through, as the people were sort of taking a new breath, a man sitting behind the strange old couple saw this boy's father lean over to the dear old lady and heard him say: 'Well, mother,

I guess that is about the best crop we ever raised'."

That is our America. And whenever this country becomes so contacted with subversive and destructive Fascist doctrines of a misguided, chaotic world that it cannot see the center, heart and soul of this spiritual source of power, we fail to make of America the country it was meant to be. God grant that we never lose sight of what we are living and fighting and dying for!

Survey of Rural Telephone Users

(Concluded from page 39)

in billing practices, but I mention this primarily as typical of a number of practices or business habits, the cumulative effect of which may have considerable bearing on the attitude of the farmer toward rural telephone service.

Referring now to the bottom of Exhibit C, I doubt very much whether any of us have a very definite idea of the hours of time or miles of driving which are saved by a farmer each month by the use of his telephone in running his farm. It seems to me, however, that definite information covering this one item would more than repay us for all of the effort that might be spent on this whole proposal, for it ought to produce some powerful sales help when the time comes that we must go out and sell service again.

In conclusion, it is also my thought that the Telephone Advertising Institute, which is now doing a great deal of hard work for the Independent companies, might be very much interested in the program from the standpoint of getting information which would be helpful in the preparation of its advertising program for the future.

And finally, I would like to propose that after discussion of these suggestions, or modifications of them, if it is the opinion of this conference that it would be desirable to undertake a program of this kind, that it would be appropriate to indicate here our desire that the commercial committee for the ensuing year develop a program for uniform use by interested companies and to provide for the tabulation and interpretation of such information so that it would be available to member companies.

WHILE YOU'RE "STILL BUILDING ON PAPER"

call in your Graybar man!

THOSE new line structures you contemplate must be "built on paper" *before* they can begin to become realities of wood and metal and glass.

Soon, you will want to begin construction quickly, *as will everyone else,* to add to facilities and relieve long-overburdened lines. So that you may be ready and able to go ahead when the good tidings come, make *your* plans right *now*. Then, when new line construction gets under way, you'll be assured of prompt delivery of the items you prefer — via GRAYBAR.

Right now, your GRAYBAR Man is ready with the latest information on materials and application. There is a GRAYBAR Man near you, ready to make your pole-line supply problems his personal responsibility. Why not take advantage of his time-saving assistance? 5528

GraybaR — GraybaR 75 YEARS OF Electrical Distribution

IN OVER 80 PRINCIPAL CITIES

Executive Offices: GRAYBAR BUILDING, NEW YORK 17, N. Y.

Payroll Practices And Procedures

(Continued from page 43)

ment. Also, such increases shall not result in the payment to any employes of a rate in excess of the highest rate paid by the employer between July 1, 1942, and June 30, 1943, for jobs of similar skill, duties and responsibility.

Further, the section of this general order pertaining to the keeping of records reads as follows:

"Any employer who makes individual wage or salary rate adjustments pursuant to a schedule must hereafter keep available for a period of two years records showing:

(1) For each job classification the rate or range of rate and description;

(2) A statement of the plan of making adjustments within the rate ranges and between the rates or rate ranges;

(3) The date when the schedule was established;

(4) For each employe who received an adjustment, his name, date hired, the date of and reason for adjustment, the job classification, and the rate of pay before and after the adjustment."

No particular order or form is prescribed for these records, provided that the information required is readily obtainable.

At this point, I should like to outline briefly what appears to be essential in the way of payroll records. Any company, whether operating in the public utility field or in the industrial field, will find that its needs will be met by four basic records, which are:

(1) Employe service record.
(2) Time roll or time sheet.
(3) Employe earnings record.
(4) Payroll authorization for changes.

Considering the first record, namely, the employe service record, it might be described as the historical record of the individual. In addition to forming a permanent file of each employe, his social security number, age, education, etc., it should show the past occupations or activities engaged in, as well as the job classifications and rates of pay while the individual has been in the employ of the company. Any supervisor or executive having such a record available will be able to study the background and the progress of each employe so that, when it is necessary to consider transfers, promotions, and the like, he will have at his disposal accurate information to aid him in his decisions. This particular record, once it is started, does not require any considerable amount of time to maintain if it is so designed that subsequent data may be entered on the record in proper chronological order.

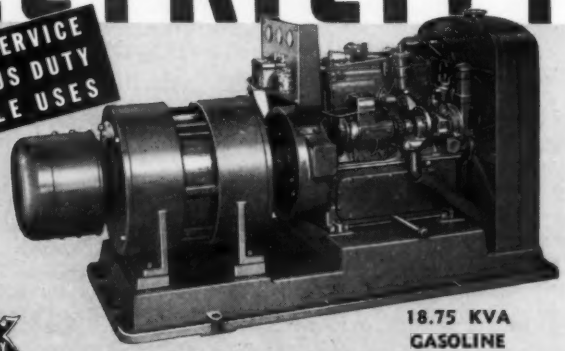
The second record which we consider absolutely essential for every employer is the time roll or time sheet, as it may be called. This form, in order to be of the most value from the standpoint of present-day record keeping, ought to show the following information:

(1) Name and social security number.
(2) Job or work classification.
(3) Hour worked each day within the week or month, depending on the payroll period.
(4) Total number of hours worked.
(5) Number of hours overtime.
(6) Basic rate of pay.
(7) Amount earned for base hours and for overtime hours, or the alternative practice of showing amount earned at regular rate for all hours worked and, separately, additional overtime amount.)
(8) Deductions made from total earnings for such items as social security tax, withholding tax, etc.
(9) Net amount to be paid.

All this may seem like a considerable amount of information for one record, but with a properly designed form, it can be made quite practical, and it does provide for the keeping on a single record the complete payroll information with respect to any individual for a given payroll period.

Directly related to this form is the employe earning record, which is substantially a form designed for the accumulation of gross earnings and deductions from gross earnings so that, at the end of each calendar quarter or calendar year, there will be available the necessary record for the compiling and preparation of reports required by the various governmental departments. Actually, various manual and machine methods have been designed to aid in the keeping of this running record so that the accumulations of figures on the form need not be a burden at the close of any reporting period.

The fourth record which is considered to be indispensable in any organization, where one person may exercise authority in the handling of employment and personnel problems and another person may have the responsibility of keeping the payroll

ELECTRICITY
for STAND-BY SERVICE
CONTINUOUS DUTY
PORTABLE USES

ARMY E NAVY
18.75 KVA
GASOLINE
More and more telephone companies are installing stand-by electric plants to insure uninterrupted service. We are supplying many of these plants. Already there are well over 1000 U. S. stand-by units throughout the world at vital radio and communication centers. U. S. Electric Plants are now available on AA3 priority or better. Write for details.
UNITED STATES MOTORS CORP.
556 Nebraska St.
OSHKOSH, WIS.
U.S. Electric Plants
GASOLINE • KEROSENE • DIESEL

records, is the payroll authorization form. This form can be a simply designed form to cover any change made in the employe's status so that, with proper signatures and authorization, it becomes the basis for changing all payroll records. This form should be used for every change that is made affecting the employe, such as change in rate of pay, change in job classification or duties, change in name, and, of course, whenever a new employe is added or a person presently employed is to be removed from the payroll. It is only through the use of such a form that it is possible to keep proper coordination between the information shown on the service record and the time roll.

These essential records which I have described briefly to you are definitely just as necessary in a small company as in the larger company. The only difference which would exist would be in their design and completeness. The larger telephone company, by reason of having various departments and divided responsibilities, often finds it necessary, from management's standpoint, to supplement these records with special reports of hours worked, comparative payroll expenditures, and the like, but none of these operating reports should be considered as supplanting any of the payroll records which we have discussed herein.

Our responsibility for keeping these records should always be approached from the standpoint that the company must not be put to any disadvantages because of inaccurate or inadequate payroll records when dealing with its employes or when an accounting must be made to a governmental agency.

V V

Ex-Cable Splicer Completes 31 Air Missions, Returns to States

Lieut. Leroy Kirkpatrick, Wilmington, Del., former cable splicer for the Diamond State Telephone Co., Philadelphia, Pa., recently arrived at the Army Air Forces Redistribution Station, Miami Beach, Fla., for reassignment processing after completing a tour of duty outside the continental United States.

Lieutenant Kirkpatrick, a B-17 Fortress pilot, flew 31 missions during six months in England, winning the Distinguished Flying Cross and Air Medal with three Oak Leaf Clusters.

V V

Countries Adopt Telephones

Out-of-the-way countries are adopting telephones more and more. Just prior to the war the Fiji Islands had 900; Albania, 1,121; Belgian Congo, 1,420; Iceland, 4,773, and Nigeria, 2,000.

STROMBERG-CARLSON
RECOMMENDS—

A Report on Project Study No. 1 of Spinning Cable

Neale Model "B" Spinner

PURPOSE—To study and report on the results obtained by the lashing method of cable suspension.

PROCEDURE—26 U.S.I.T.A.* well-qualified plant men made a careful study and analysis of the practices and results obtained by their companies in using the Spinning Method. Individually prepared reports were carefully analyzed by the Association's Engineer in Washington.

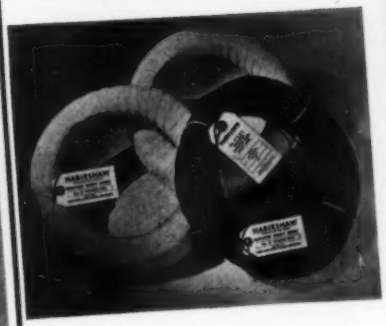
RESULTS—Many advantages of spinning cable were brought forth:

★ Minimum of transverse abrasive wearing action.
★ Minimum of creeping or pulling in corners and dead ends.
★ Elimination of bowing.
★ Less damage due to lightning or power contacts.
★ Both small and large size cable can be readily spun.
★ Elimination of "oscillation" during sleet and wind storms.
★ A material saving of from 20% to 30% can be obtained.

Reduce your annual expense by spinning both old and new cable with the NEALE Model "B" Spinner.

*United States Independent Telephone Association.

AVAILABLE NOW!



HABIRSHAW No. 17 BRONZE DROP WIRE

Now Available for *Immediate Shipment* from Stock

High strength bronze conductor . . . expertly blended synthetic rubber insulation . . . soft, unbleached cotton braid, thoroughly saturated to provide a long-lived moisture-resisting covering.

A Quality Product Made by

Phelps Dodge Copper Products Corporation

Habirshaw Cable and Wire Division

STROMBERG PROGRESS IN TELEPHONY CARLSON

STROMBERG-CARLSON COMPANY

Factory and General Offices: Rochester 3, New York, U. S. A.
Branch Offices: Chicago, Kansas City, San Francisco, Toronto

Adequate Accounting Records

(Continued from page 46)

supervised costs, or on the so-called "Wisconsin" method. The decision rested entirely on the fact that the company was unable to *prove* that the overheads had actually been incurred. Considerable emphasis was placed on the fact that the company had offered no proof of its contention that it costs as much to administer a dollar of construction as it does to administer a dollar of operation. The high point of this decision, insofar as general and administrative overheads are concerned, was that such costs based on formulas which are not supported by time studies are not acceptable.

It should be anticipated that the various commissions will give greater attention to this subject, as one of their postwar undertakings, and utilities should make sure that their records will adequately support the distribution of overhead charges between construction and operation.

Before leaving the subject of overheads, I should like to point out that a company should not feel that it is avoiding trouble by charging construction overheads to expense. The future rate problems of such a procedure are far reaching and apt to be much more troublesome than the current problem of a proper distribution of the charges between property and expense. Notwithstanding agitation on the part of a few commission representatives to have all overheads charged to expense, or to capitalize only the so-called "incremental" costs, proper accounting requires that construction overheads be capitalized. Actually, the classifications of practically all of the commissions do not permit any other procedure.

Another phase of utility record keeping which needs improvement, especially among some of the smaller companies, is the matter of depreciation rates. For income tax purposes, the burden of proof is on the taxpayer, as, no doubt, some of you have found within the last few years. It is not possible, of course, to establish the correct rates for your company merely by reference to rates used by other Independents or by Bell System companies. Each company must be in a position to substantiate its own depreciation policies, and your files should at least contain a comprehensive memorandum describing the method which was followed in determining the rates you are using, together with copies of the schedules and engineering data used in making the estimates.

Most of us seem to have a natural aversion to preparing memoranda of conferences, and herein lies one of the important weaknesses in record keeping. Because most of the daily conferences are along general policy lines and do not result in specific entries in the general records, there is no immediate incentive to make notes of the decisions. No doubt all of you have had the experience of apparently reaching an understanding with one of your superintendents or department heads on some matter of policy, only to find out a few weeks or months later that your understanding was entirely different from that of the other party. Or perhaps you can recall having discussed the matter, but you are unable to remember just how it was decided. Sometimes the other party involved doesn't even remember having discussed the problem before.

This is a very common situation, but one which is easily overcome by the conscientious use of some standard procedure of recording the results of all conferences. For this purpose, some companies use a regular printed form known as a "Conference Memo." This form, usually letter size, provides space at the top for the names of the parties attending the conference, the date, location, and the general subject discussed. This is followed by a space for a summary of the purpose of the discussion. Most of the remainder of the sheet is devoted to the conclusions, followed by spaces for the initials of the individuals attending. Following each conference, copies of the form are typed and distributed to each person who attended the discussion; thus, each participant has an opportunity to voice his approval or disapproval of the expressed conclusions. The accounting department copy of this form is sometimes circulated for the initials of those attending the meeting and then filed according to subjects.

Of course, the same result could be accomplished without the special form, but the standardization brought about by this form makes it an official part of the company's records and tends to encourage its use. This simple procedure will save time and countless misunderstandings, and no doubt many of you are following some similar plan. If not, I would suggest that you adopt it as one means of improving the record of the "thinking" that underlies all important entries.

"ENDURANCE"

TELEPHONE WIRES

With Rubber and Plastic Insulation

Drop (Bronze, Copperweld, Copper or Iron)
Bridle, Interior, Duct, Fixture, Tree, and Ground

Serving the War Effort Today . . .
The Telephone Industry Tomorrow.

GENERAL INSULATED WIRE WORKS, INC.

65-105 GORDON AVENUE • PROVIDENCE 5, R. I.

TELEPHONE—HOPKINS 2100

In summing up, it seems to me that there are really two fundamental reasons for the maintenance of accounting records. First, it is necessary that we have an adequate record of past transactions so that the stockholders, directors, officers and employes can be protected in the course of action that has been taken. This is the "proof" side of the picture and it is particularly necessary in the case of a utility because of the general public's interest in its affairs. Second, it is necessary that management have a complete record of past transactions in order that it may act intelligently in the conduct of future affairs. This phase of accounting involves not only the preparation of financial statements covering past transactions, but also a projection of these transactions into the future in the form of budgets and cash forecasts.

Finally, it is necessary that *all* accounting information be carefully preserved in the records; it is not enough that it be known to the auditor, the superintendent, or to other officers or employes of the company. We must keep in mind that most corporations are continuing entities, whereas individuals come and go. In order that there may be continuity, it is essential that a clear record be maintained of all transactions.

V V

Early Risers Depend on Telephone Call Service

A surprising development consequent on the shortage of alarm clocks and the difficulty of obtaining a clock unless in one of the qualifying groups, has been the use made of Great Britain's telephone system to insure early rising.

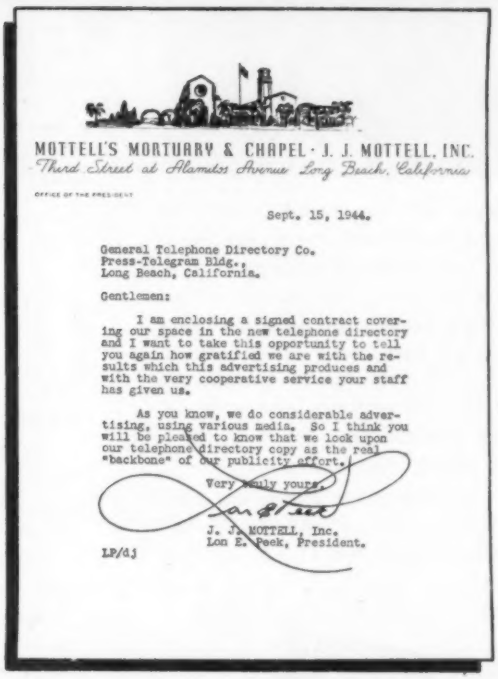
In Edinburgh, some subscribers to the telephone system now make use of this method, particularly when anxious to be up early for a special occasion. To make a daily habit of the method would be expensive since each call costs three cents. Among those who use the alarm call system are Home Guardsmen due for early morning duty, or business men with an early train to catch. People employed at early markets have also used it intermittently, but in some instances, instructions have been given for calling for fairly long periods.

The majority of those who have failed to obtain a clock are still relying on the telephone system, and file their requests to be called at a certain hour in the morning, regarding the threepence it costs as very well spent, in that it means a morning train caught, or a market attended in time.

Read what One of America's Finest Mortuaries says about Telephone Directory Advertising and about Our Service.

Lon E. Peek
President
Mottell's Mortuary
Long Beach, Calif.

Mottell's was established in Long Beach in 1919. Architecturally it is one of the most beautiful establishments in California and, in number of funerals conducted it is among the leading mortuaries in the United States.



MOTTELL'S MORTUARY & CHAPEL · J. J. MOTTELL, INC.
Third Street at Alamitos Avenue Long Beach, California

OFFICE OF THE PRESIDENT

Sept. 15, 1944.

General Telephone Directory Co.
Press-Telegram Bldg.,
Long Beach, California.

Gentlemen:

I am enclosing a signed contract covering our space in the new telephone directory and I want to take this opportunity to tell you again how gratified we are with the results which this advertising produces and with the very cooperative service your staff has given us.

As you know, we do considerable advertising, using various media. So I think you will be pleased to know that we look upon our telephone directory copy as the real "backbone" of our publicity effort.

Very truly yours,

J. J. MOTTELL, Inc.
Lon E. Peek, President.

LP/dj

"Making More Money from Your Telephone Directory"

This is the title of an interesting booklet dealing with the experience of this Company in the sale of telephone directory advertising and the publication of directories for various independent telephone companies. If you wish a copy, we shall be glad to mail one to you upon request.

GENERAL TELEPHONE DIRECTORY COMPANY

EASTERN OFFICE: Ben Hur Bldg., Crawfordsville, Indiana
WESTERN OFFICE: Press-Telegram Bldg., Long Beach 2, Calif.

COFFING HOISTS

When full construction and maintenance can be resumed you will want it accomplished quickly and economically. Coffing hoists and utility maintenance tools will assist you in doing those "back-breaking" lifting and pulling jobs with an ease and sureness that will save you many man hours.

In your post-war plans be sure to include a "Safety-Pull" ratchet lever hoist for every truck.

Write Today for Catalog TG-6

FOR SPEED
SAFETY
ECONOMY
DURABILITY

IN PRACTICALLY ALL LINES OF INDUSTRY COFFING HOISTS ARE PLAYING A PROMINENT PART IN SPEEDING UP
CONSTRUCTION
PRODUCTION
MAINTENANCE

COFFING HOIST COMPANY
Danville, Illinois, U. S. A.

Advertising Report

(Concluded from page 55)

advertising and other worthwhile publicity is just as small in relation to what it can be used to protect.

It will be the endeavor of the institute to serve in such a manner that its services will be indispensable. The institute can only make its services valuable and available. It will require alert, progressive management to use the service and bring its benefits to the Independent telephone industry.

A report of this committee would not be complete without an expression of sincere appreciation and thanks to our two fine trade journals, TELEPHONY and Telephone Engineer, for the fine cooperation accorded the committee in its work of establishing the institute. R. C. Reno and Ray Smith have not only given freely of their time as members of our committee, but have also carefully reported the progress of the endeavor. Even the advertisements that they published calling attention to the availability of the institute's services were contributed by these journals as a service to the industry. Only through the cooperation of many has it been possible to make this low-cost advertising plan available. We sincerely hope the plan will be of real service to our industry.

V V

English Unable to Use American Microphones

Englishmen are unable to use the American throat microphones, turned over to British air combat crews, the Army Signal Corps disclosed, according to a news dispatch from London July 17. The throat microphones, however, relay clearly the words of Scots, Welsh, Dutch and other nationalities.

The Englishmen form their tones in the roofs of their mouths, consequently their words are unintelligible over these mikes.

V V

Carolina T&T Cashier Named

MRS. T. F. TYSON, JR., has been named cashier of the New Bern exchange of the Carolina Telephone & Telegraph Co., succeeding INA BREWER who on October 1 completed 35 years' service at New Bern and was retired on pension.

TREE TRIMMING

(1) Inspect your tackle, your tools and the tree.

(2) Select safe places to drop limbs—clear of all wires.

(3) Make provisions to warn all pedestrians and motor vehicles of danger of falling limbs either with suitable signs or by stationing a watchman.

(4) Select best place to climb and use a ladder to ascend to first substantial branch or crotch.

(5) Place ladder so that both rails are supported at the top, not just one rung.

(6) Make sure ladder is secure. Lash it in place if there is the least danger of it slipping on the ground or swinging around the tree trunk.

(7) Watch constantly for unsound limbs. Cut them off as you go up and there will be much less danger when you descend.

(8) Never work in any tree, regardless of height or whether working from a ladder, without making yourself secure with a safety saddle and safety line.

(9) Keep slack out of safety line; do not burn it by allowing it to slide through crotches rapidly. Never allow running end to reach the street where it might be caught by vehicles.

(10) Place only one hand on each limb when climbing.

(11) It is best to wear cap instead of felt hat, breeches instead of trousers, shoes with medium-weight rubber fabric soles, and short gloves that button or strap at wrist.

(12) If necessary to work near energized conductors have them de-energized, if possible, but consider them energized. Be especially careful in wet weather.

—THE BIG PARADE

Carrier Systems Adaptable To FM, Says AT&T Engineer

"If the radio industry wants FM radio program networks that employ frequency bands two, three, or even more times the width of today's standard broadcast bands, facilities to do the job can be supplied," Ernest W. Baker, American Telephone & Telegraph Co. engineer, told a joint meeting of the American Institute of Electrical Engineers and the Institute of Radio Engineers on October 4 in New York City.

Telephone broad band carrier systems, employed at present in the Bell System, form a nationwide network which can readily be adapted for use as program circuits to interconnect FM broadcasting stations, Mr. Baker declared.

He cited a trend in recent years toward broad band carrier systems in the telephone plant, including cable and open wire carrier systems carrying frequencies extending up to 60,000 cycles and beyond; and the new coaxial cable system which is capable of accommodating a frequency band several million cycles wide with present equipment.

"All these broad band carrier systems," Mr. Baker said, "employ, in common, the principle that a broad band of frequencies is subdivided to obtain a number of telephone circuits. For use with such carrier systems, special carrier program terminal equipment arrangements have been developed which enable a program circuit to be obtained by using the frequency space normally occupied by one or more message telephone circuits. Changes are not required in the line conductors and equipment."

It is uncertain at the moment, Mr. Baker stated, just what the design objective for intercity program circuits should be to meet the broadcasters' requirements for connecting FM stations.

"The present extensive program networks are made up largely of facilities equalized to 5,000 cycles," he said. "However, if the broadcasters decide they want circuits wider than 5,000 cycles, the telephone companies will be able to supply them, whether the demand be for 8,000 cycles, 10,000 cycles, 15,000 cycles, or even higher."

Mr. Baker pointed out that practically all the FM stations built thus far, or for which application has been made, are in or near cities on existing intercity program routes. Over these and other routes the telephone companies are prepared to furnish the types of circuits FM broadcasters may require.

Some of the present FM stations are now being supplied with distant pro-

Are You Ready?

1. ARE YOUR PLANS COMPLETE?
2. HAVE YOU READ THE U.S.I.T.A. STUDY?
3. DO YOU HAVE ALL THE DOPE ABOUT OUR NEW MACHINES?

Get Set--to Go now with a

NEALE SPINNER

TELEPHONE COMPANIES, BOTH LARGE AND SMALL ARE INCREASING THEIR PROFITS WITH THE SPINNER METHOD—BY REDUCING COSTS ON NEW INSTALLATIONS AND REPAIRS ON EXISTING CABLE.

CHECK WITH YOUR JOBBER NOW.

CABLE SPINNING EQUIPMENT CO.

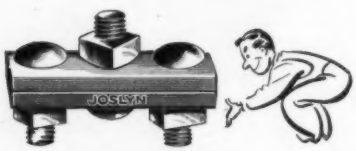
TOPEKA

FEWER EMERGENCY REPAIRS—

THIS WINTER IF YOU USE BUCKEYE GUYING MATERIALS NOW!

Galvanized Steel Strand

Thimbleye Bolts (Straight and Angle)



Guy Clamps

Lag Screws Also Lift Plates

Jay Hooks, Strain Plates, Anchor Rods, Anchors, Machine Bolts, Washers, Carriage Bolts

BUCKEYE
TELEPHONE & SUPPLY CO.
COLUMBUS, OHIO

grams over existing networks, the speaker said, and it is entirely practicable to continue this arrangement or to provide separate networks for FM stations if the broadcasting industry desires them.

Present interest in FM indicates a resumption of activity and an expansion of this type of broadcasting soon after the war ends, Mr. Baker said, pointing out that applications have been filed with the Federal Communications Commission for more than 250 FM broadcasting stations scattered throughout the country.

"There are today," he said, "about 830 radio broadcasting stations in some 550 cities served on a full-time or occasional basis by intercity telephone wire lines. This requires about 90,000 miles of telephone company circuits for the regular full-time broadcasting period. In addition, about 45,000 miles of circuits are provided on these and paralleling routes, to handle part-time services and to make possible quick restoration of the program in the event of a failure of the regular layout."

Mr. Baker said that program circuits are being provided on the same open wire lines and in the same cables with message telephone circuits and other communication channels.

"The Bell System has obtained approval to make an experimental installation of a radio relay system between New York and Boston," he said, "to determine if the radio system could handle a very wide band of frequencies which might be subdivided for various services such as message telephone, program circuits and television circuits in much the same manner as is done with coaxial cable. If this trial proves successful, telephone companies in the future would expect to use radio links in program circuits where that method of transmission seems preferable to wire line methods."

V V

In Spite of Headlines, "It's Papa Who Pays"

Prior to Father's Day of this year, the Ft. Smith (Ark.) Chamber of Commerce decided to give a free telephone call home to 50 servicemen stationed at Camp Chaffee and Camp Jesse Turner. Several large ads were run in the local newspapers, giving the details as to how these free calls could be earned. Several papers carried large headlines stating: "Free Calls to Soldiers on Father's Day."

Later Martha Lou Lyon, Ft. Smith service representative for the Southwestern Bell Telephone Co., received a colored customer who wanted a call taken off his bill. Miss Lyon, not realizing what the trouble was, asked him why and he replied, "This is my Father's Day call from my boy."

Still somewhat at a loss as to his meaning, she inquired if the call was satisfactory, etc., and the reply was "Yes, the call was O.K. but I just want to get this Father's Day call off my bill; don't see why it was put on anyhow, since they was free."

ALONG ELECTRIC POWER LINES

Linemen are exposed to many hazards when clearing trees and branches from the right-of-way. Here are some suggestions:

(1) Before cutting a tree or large branch, determine the safest direction in which it can be felled.

(2) Use sufficiently heavy bull or tackle lines; place lines in position before cutting is begun.

(3) Take note of the direction and intensity of the wind and the lean and condition of the tree or branch.

(4) Use automotive power for anchoring and pulling the tree, if possible.

(5) If the condition of the tree permits, top it instead of felling the entire tree.

(6) Control the fall to prevent the tree or branch from falling or swinging near to a high tension line.

(7) Take care to keep entirely clear of the tree or branch as it falls.

(8) It may be necessary for your safety to have removed a high tension circuit from service before the cutting is attempted. *Make sure this is accomplished.*

(9) Use a safety belt and life-line when your safety requires them.

(10) Familiarize yourself with methods of resuscitation from electric shock.

—THE BIG PARADE

AT&T Engineer Discusses Broad Band Carrier Systems

Frank A Cowan, New York, transmission engineer for the American Telephone & Telegraph Co., addressed the National Electronics Conference at Chicago, Ill., on October 6 on the subject of "Broad Band Carrier and Coaxial Cable Networks." Mr. Cowan also discussed, generally, the technical aspects of broad band carrier systems as employed in the telephone plant. Following are excerpts from his speech:

"The unprecented growth in volume of communications, occasioned by the war, has required the addition of millions of miles of intercity circuits to the long distance telephone network. Most of these have been provided by carrier systems. Three of the most important types of these carrier systems are designated "broad band systems" and may operate over pairs of wire in cable, over pairs of open wires or over coaxially arranged conductors in cable.

"The coaxial cable system is the most recent in design and is expected to be used extensively in meeting new requirements for long distance telephone circuits. This cable system may also be used for television network service. Present plans contemplate placing new coaxial cables over about 7,000 miles of route in the next few years."

Mr. Cowan described the application of broad band systems in telephone communications. Looking to the postwar period, he said the possible use of coaxial cable in television networks is a subject of natural interest.

He referred to the Bell System coaxial cable construction program announced last spring, and the experimental radio-relay route now being prepared between New York and Boston.

"The dates by which television might be made available (via coaxial cable) are as follows:

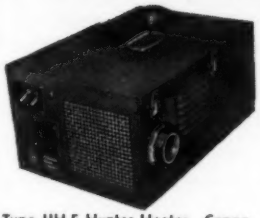
"1946
New York-Washington
New York-Boston (Radio relay trial may be used.)
Washington-Charlotte
Los Angeles-Phoenix

"1947
Chicago-Toledo-Cleveland-Buffalo
Washington-Pittsburgh-Cleveland
Southern Transcontinental Route (Will include Atlanta-Birmingham-Jackson-Dallas-El Paso-Tucson-Phoenix.)
Chicago-Terre Haute-St. Louis

"1948-1950
Southern Transcontinental (Complete)
St. Louis-Memphis-New Orleans
Kansas City-Omaha
Des Moines-Minneapolis
Atlanta-Jacksonville-Miami
Los Angeles-San Francisco

Illustration courtesy The American Coach & Body Company

AUXILIARY HEAT
for Personnel Carriers



Type UH-5 Hunter Heater. Capacity 15,000 Btu/hr. Portable or installable.

Sure, crew men are tough. They can (and do) "take it" under all sorts of weather conditions . . . but they get a much better break in their efforts to maintain that standard of service for which utility crews are famous if they are protected against *unnecessary* chill and discomfort, on the haul and on the job.

Crew compartments like the one illustrated, for instance, provide a degree of comfort that greatly improves working conditions. When heated with a Hunter gasoline-fired auxiliary heater, such a compartment not only takes the curse out of cold hauls to and from the work, but provides a convenient "office" for use on the job. Hunter Heaters operate independently of the engine, burn any type of gasoline, and burn it economically in proportion to the heat produced.

Whether your problem is hauling men in trucks (with or without compartments), or larger gangs in bus-type carriers, there is a type of Hunter Heater that will provide useful auxiliary heat.

Type UH-10 Hunter Heater. Capacity up to 25,000 Btu/hr. Remote controls.

BULLETIN HG-4 Describes all types of Hunter Heaters

HUNTER AND COMPANY
Transport Equipment
CLEVELAND • OHIO

1562 EAST 17TH STREET • CLEVELAND 14, OHIO

"The routes indicated above are subject to review just prior to the time construction would be started. The requirements of the armed forces, general business conditions, the volume and distribution of long distance telephone messages, the availability of the necessary manufactured cable and equipment, and other factors may modify the extent of this construction, when and where it will be undertaken."

Turning to future plans of the telephone companies, the speaker discussed possible developments in the field of intercity television transmission.

"The plans for coaxial cable installation on the routes discussed represent only one phase of the likely development if television is to play the important role in the life of the nation which is forecast. The development of new and unforeseen techniques, coupled with the degree of public interest in television, may well result in significant modifications in the provision made for intercity television transmission.

"One of these sources of possible change is relayed radio. Experiments are planned which should permit the evaluation of the possibilities of relayed radio in long distance transmission. The Bell System has announced a trial of a radio relay chain between New York and Boston. For this trial, about 10 intermediate relay repeater points will be used and experiments will be conducted at frequencies in the 2,000 megacycle, 4,000 megacycle and 12,000 megacycle ranges.

"If such a system should prove successful and be capable of being operated at a reasonable cost, there is a possibility that the future will see extensive use of radio relay in long distance intercity communication. It would be expected that, as in the case of coaxial, the broad frequency bands provided might be utilized for television, telephone or other types of communication.

"Past experience has shown a continued trend toward the use of wider and wider frequency bands for communication purposes. With the need for additional communication channels or for greater definition in television pictures there may well develop a requirement for broader frequency bands on coaxial cables. There is under development at present, equipment for use with these cables which will provide a seven megacycle band capable of being used in furnishing an effective four megacycle television circuit, together with 480 telephone circuits.

"The proposals for higher quality or color television which are now under consideration would require an effective video band of nine or 10 megacycles. If the need develops, this might require the development of systems for transmitting this or even wider bands over coaxial cable.

"For more than a decade the Bell System has conducted research work on still another system of transmission which would provide bands of many megacycles in width. In this system very high frequency waves are guided through hollow pipes. The technique for generation, amplification and control of the very high frequencies used in the wave guide system may also be employed when these frequencies are used for microwave radio.

"The relative extent to which guided waves or radio beams in space will be used in the future cannot accurately be predicted at this time. Wave guides have the advantage of avoiding some of the possible sources of interference in radio, but they do require the construction of the guiding structure over the route used.

"Just how any of the future possibilities discussed in the foregoing will develop or what other arrangements might be introduced cannot be foretold with any certainty but it seems clear that the frontiers of broad band frequency transmission have ample room in which to move forward."

V V

Association Changes Name

Effective September 7, the title of the Telegraph & Telephone Section of the Operating-Transportation Division of the Association of American Railroads was changed to Communications Section, Operating-Transportation Division, according to an announcement from the section's secretary, W. A. Fairbanks.

V V

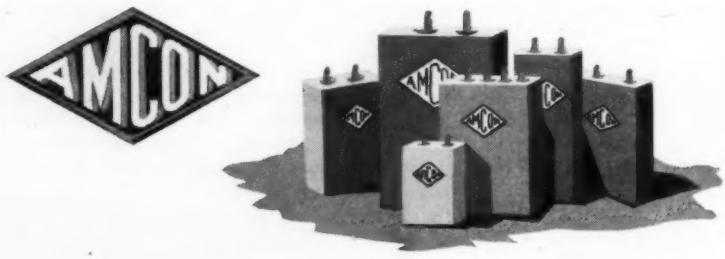
Mayor Vetoes Tax Ordinance

Mayor Earl D. Schob, Marietta, Ohio, recently vetoed an ordinance leving a 3 per cent commodity tax on consumers' bills for telephones, electricity, fuel gas and water.

V V

Laurel, Neb., Manager Resigns

MISS IRMA COBURN, chief switchboard operator and exchange manager of the Laurel (Neb.) Telephone Exchange, resigned recently and plans to leave with her father, D. D. COBURN, for Compton, Calif., where they expect to make their home.



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AMERICAN TELEPHONE
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TELEGRAPH CONDENSERS

SPECIFICATION SHEETS ON REQUEST

AMERICAN CONDENSER CO.
4410 No. Ravenswood Ave., Chicago 40, Ill.

OBITUARIES

JOHNSON BENTLEY CLARK, 83, who started the first telephone system in Vandalia, Mo., died recently after several weeks' illness. He is survived by a daughter, Mrs. Paul Kendrick, of near Vandalia, and a brother, W. H. Clark of St. Louis.

* * *

JOSEPH EPPLIN, SR., 81, original secretary of the Four Mile Telephone Line in Pinckneyville, Ill., died September 28 at his home after being in failing health for over a year. Mr. Epplin served as secretary of the Four Mile Line for more than 25 years.

He is survived by his widow; four sons, Joseph, Frank, Louis and Edward, and one daughter, Mrs. Jos. Miller.

* * *

ALBERT W. DRAKE, 72, who retired in 1932 as commercial manager of the Long Lines Division of the New York Telephone Co., died at his home in Plainfield N. J., on October 8.

He joined the New York company soon after graduation from the Massachusetts Institute of Technology in 1895. Mr. Drake was welfare director of Plainfield from 1936 to 1938, and in 1940 received the democratic primary nomination for mayor, but withdrew because of poor health.

Surviving are his widow, two daughters, Mrs. John C. Martin, of Plainfield and Pvt. Marjory Drake, of the Women's Army Corps, and a son, Robert M. Drake of York, Pa.

* * *

THADDEUS SELBY LANE, 72, founder of the Montana Independent Telephone Co., died October 2 in Spokane, Wash.

Mr. Lane went to Montana in 1906 where he established the Montana company, which served Montana, northern Idaho and parts of Washington. He later had his offices in Spokane, where he established the first automatic telephone service.

He is survived by his widow, one daughter, and two sisters.

V V

Named Committee Chairman

HARRY S. HANNA, vice president of the Indiana Bell Telephone Co., recently was named chairman of the Allotment & Occupancy Committee for the Indianapolis Industrial Exposition, a permanent exhibit to be installed at the Union Station and sponsored by the chamber of commerce.

STROMBERG-CARLSON
RECOMMENDS—

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Product of

T. J. MOSS TIE COMPANY

Poles bearing this trade-mark are your guarantee of the highest quality creosoted southern yellow pine poles.

Every pole bearing this mark is completely supervised from tree to consumer by men experienced in the industry.

SUB-CYCLE

"MASTER" RINGING CONVERTER

No Moving Parts . . . Nothing to Adjust

Sub-Cycle brings to the telephone field an exclusive development in an *alternating current* Power Ringing Converter which fully meets the requirements of operating companies.

It produces a powerful ringing current entirely independent of frequency variations in the commercial power supply.

Economical and quiet in operation, it does not interfere with radio and requires no routine maintenance.

Available in 6 models suitable for loads required for small P.B.X.'s to large central offices.

Output capacities 7½ to 40/50 watts.

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STROMBERG-CARLSON COMPANY

Factory and General Offices: Rochester 3, New York, U. S. A.

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F. C. Woods, Galesburg (Ill.) Pioneer, Dies

Frederick C. Woods, 79, president of the Intra State Telephone Co., Galesburg, Ill., and a pioneer in Independent telephony, died October 12 at his home in Galesburg, following a serious illness of about a week.

His illness prevented his attendance at the recent convention of the United States Independent Telephone Association, which meetings he seldom missed because of his desire to keep abreast of all new developments. It was this interest in telephone work which helped him to become one of the best technically-informed men in the industry in the state of Illinois.

Mr. Woods was born in Uppingham, England, September 5, 1865. At the age of eight, accompanied by his 12-year-old sister, he came to this country to join their father who was living in Nebraska.

He lived in Nebraska for a number of years working at various jobs. Early in life he became interested in electricity and as a young man, went to Illinois and became night operator in the Sterling telephone exchange in 1893. Not content with being an operator, he familiarized himself with all the intricacies of the industry,

FREDERICK C. WOODS

and it was not long until he entered the service of the Kellogg Switchboard & Supply Co. doing engineering work and installing switchboards at various exchanges.

In the fall of 1904, about two years after the Galesburg Union Telephone Co. was organized with the late George B. Churchill as president, Mr. Woods was secured as its manager. November 1, 1917, the Galesburg Union Telephone Co. consolidated with the Central Union Telephone Co. and in 1926, when the company enlarged its holdings, the name was changed to the Intra State Telephone Co.

During Mr. Woods' half century in the telephone industry, he had served in about every capacity and held the highest offices in the company with which he was associated. For many year he had been general manager of the company and, upon the death of the late O. N. Custer, succeeded him to the presidency.

One of the notable things that Mr. Woods did in the development of the service was to instigate putting all of the company's wires underground. While this was not a new idea, some of the methods he used were his own, and many telephone representatives from all parts of the country inspected the construction.

Several articles written by Mr. Woods have appeared in trade journals. He was a member of the Independent Pioneer Telephone Association and has been active in that organization as well as in the United States Independent Telephone Association.

He is survived by his widow.

V V

Dr. Frank B. Jewett Retires; Completes 40 Years' Service

Dr. Frank B. Jewett, vice president in charge of development and research of the American Telephone & Telegraph Co., retired September 30, having reached the company's retirement age after four decades of service with the Bell System. His resignation as chairman of the board of directors of Bell Telephone Laboratories also was effective on that date.

Dr. Jewett has announced that he will devote full time to his work as president of the National Academy of Sciences and as a member of the National Defense Research Committee of the Office of Scientific Research & Development, as well as to allied war research activities. He will divide his time between New York and Washington.

As president of the National Academy of Sciences since 1939, he helped in the formation of the NDRC and has been a member of that committee since its inception. He has had responsibility for three phases of its research activity involving subsurface warfare, as for example, defense against enemy submarines and improved offense for our own; communications, ranging from secret devices to world-wide systems, and transporta-

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Quality WIRE for Every Telephone NEED

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tion, including amphibious carriers and other non-aeronautical means.

In this and other official capacities, he has been devoting a major portion of his time directly to the war effort. He is a member of the Signal Corps' Coordination & Equipment Division and a consultant to the chief of ordnance of the U. S. Army.

Dr. Jewett, in whose honor the AT&T company recently established a trust fund to finance post-doctorate fellowships in physical science, is recognized as one of the world's outstanding leaders in the application of scientific research to industry. (TELEPHONY, October 7, page 87.)

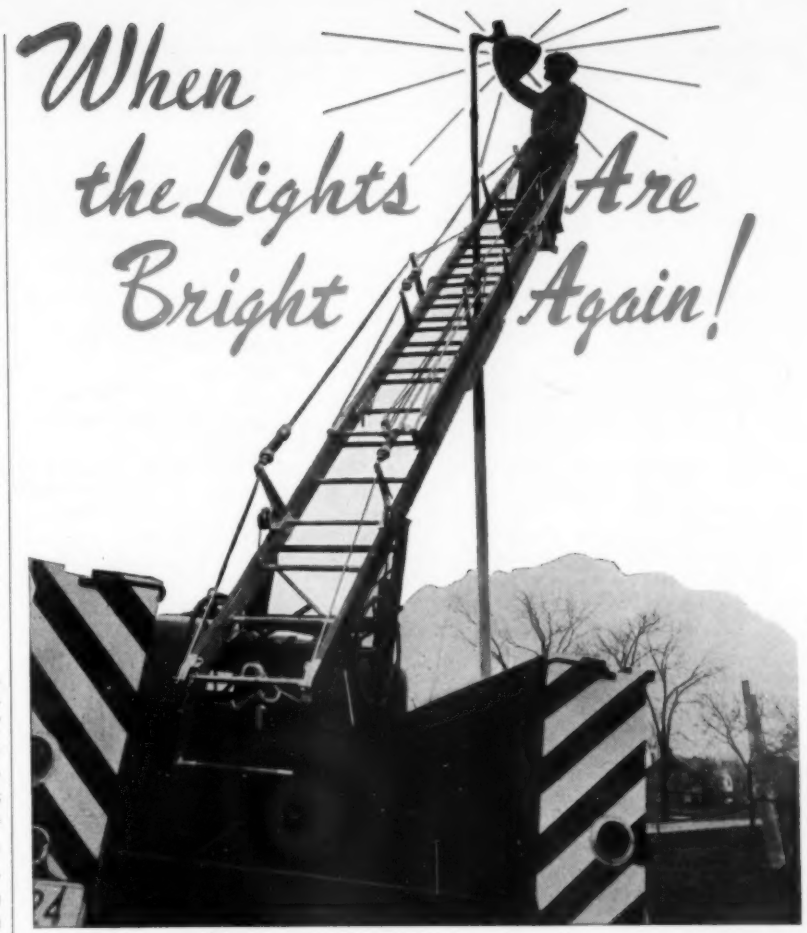
He joined the engineering department of AT&T in 1904, going there directly from the Massachusetts Institute of Technology where he was an instructor in physics and electrical engineering. He soon was given charge of engineering research work, and from 1908 to 1912 was transmission and protection engineer.

He next transferred to the Western Electric Co. as assistant chief engineer, in 1916 and vice president of that company in 1922. It was in 1925 that he was made AT&T vice president in direct charge of development and research, and president and director of Bell Telephone Laboratories.

Over a long period of years, numerous honorary degrees and medals have been awarded him. He and only three other Americans have received the Faraday Medal of the Institution of Electrical Engineers of London. He also received the Edison Medal of the American Institute of Electrical Engineers, the Franklin Medal, the Washington Award of the Western Society of Engineers and the John Fritz Gold Medal. The latter, highest American engineering honor, was bestowed upon him for "Vision and leadership in science and for notable achievement in the furtherance of industrial research and development of communication."

During World War I he served as a lieutenant colonel in the Signal Corps and did extensive research work for the War, Navy and state departments, notably as a member of the Anti-Submarine Board and of the state department's special committee on cables. He was awarded the Distinguished Service Medal in 1919.

Dr. Jewett is trustee of the Carnegie Institution of Washington and of Princeton University, a life member of the Massachusetts Institute of Technology Corp., a fellow and past president of the American Institute of Electrical Engineers and is active in many other professional groups.



• • • • and from Coast to Coast thousands of new building projects must be supplied with communication and light and power facilities. Will you have the necessary service equipment?

GET SET NOW FOR YOUR NEEDS WITH "AMERICAN'S" REPLACEMENT PLAN

The American Coach Replacement Plan has been developed to speed up the delivery, to the Utilities, of the new Utility Body Trucks and mechanical equipment that will be so sorely needed after "V" Day.

Participation in this plan places you under no obligation. It does assure you, however, of delivery of trucks and equipment in the shortest possible time after government restrictions are lifted.

Here is a practical, easy solution of one of your post-war planning problems. Write, wire or phone for complete details.

CONTINUE TO BUY WAR BONDS

THE American COACH & BODY CO.

PUBLIC UTILITIES EQUIPMENT FOR MOTOR VEHICLES

Northwestern Bell Announces Personnel Changes

The Northwestern Bell Telephone Co., Omaha, Neb., recently announced the election of Frank C. Builta and John H. Kremers as vice presidents of the organization.

Mr. Builta has been with the company for 34 years, with time out for service in World War I. He was attached to the commercial department until 1921, when he was made assistant to the president. In addition to his new duties, Mr. Builta will continue in charge of administration and coordination of public relations, and information and advertising matters.

Mr. Kremers has held various positions in the traffic department of the Iowa area, but since 1939 has been a member of the general headquarters organization, more lately as operating results engineer. He was also assistant to the president.

The promotion of Mr. Kremers led to the stepping up of four other employes. A. F. Jacobson, with a 22 year service record, which included the job of district manager first at Sioux Falls, S. D., and later at Minneapolis, Minn., became operating results engineer. L. S. Lambert became assistant personnel director and continues as chairman of the employes benefit committee. James B. Moore, with the company since 1926, succeeds Mr. Jacobson as commercial results supervisor. He has been, successively, district manager at Ottumwa, Council Bluffs and Omaha, Neb. Carroll D. Gietzen succeeds him in the later position, being transferred from district manager at Sioux Falls.

V V

Ohio Company Operated by Family of Six

It's called the Citizen's Telephone Co., but it should be named the McClusky Telephone Co.

Located at Rock Creek, Ohio, the company serves 270 subscribers, but uses only six employes—all members of William McClusky's family.

His three sons, Thomas, 14, James, 12, and Dick, 11; his wife, Pauline, 40, and his daughter, Alice, 17, all help keep the lines in good repair. The boys and their father do the climbing and wire stringing, while Alice and her mother handle the ground work, drive the truck and do the office work.

No operators are necessary. The switchboard is tied in with Ashtabula and is automatic.

Henry A. Arth, Kellogg Division Manager, Dies

With the untimely death of Henry Albert Arth, manager of the Pacific Coast sales division of the Kellogg Switchboard & Supply Co., on October 3, the Independent telephone industry has lost a true friend and pioneer. Mr. Arth was a staunch supporter of the Independent cause on the west coast and was widely known for his efforts to assist operating companies with their problems.

HENRY A. ARTH

Born on December 22, 1893, at Oakland, Calif., Mr. Arth was educated in California and there centered his entire business activities. In 1912, he joined the Kellogg Switchboard & Supply Co. For the past 32 years, he represented the Kellogg company in various capacities, operating from the company's Pacific Coast divisional headquarters.

He was appointed manager of the Pacific Coast sales division in 1930, and in this capacity, has had complete charge of the division's sales, service and warehousing operations.

During World War I, Mr. Arth served as a corporal in the Signal Corps in the U. S. Army. He is survived by his widow and a son and a daughter.

V V

L. F. Roberts Named to Board of Education

Leon F. Roberts, commercial manager of the Jamestown (N.Y.) Telephone Co., was named by Mayor Samuel A. Stroth to fill the vacancy on the board of education created by the death of one of the members.

The appointment became effective immediately. Mr. Roberts formally accepted the appointment on October 4.

Airco Dry Nitrogen
SIMPLIFIES CABLE TESTING
A quarter century of experience proves that AIRCO Dry Nitrogen is equally effective for checking new cable and for permanent gas pressure installations. Important telephone systems rely on AIRCO Dry Nitrogen for cable protection rather than trust to uncertain manual inspection.
Please Order Only As Needed
Return Empty Cylinders Promptly
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AIR REDUCTION
General Offices: 60 EAST 42nd STREET, NEW YORK 17, N. Y.
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F. G. Teufel Appointed Philco Midwestern Sales Manager

Fred G. Teufel, district manager of the Storage Battery Division of Philco Corp., Cleveland, Ohio, has been named Midwestern sales manager of the division which includes supervision of offices in Buffalo, Pittsburgh, Cincinnati, Detroit, Chicago and Cleveland. He also becomes a member of the management staff at headquarters.

F. G. TEUFEL

Mr. Teufel is well-known in the storage battery industry throughout the United States. He spent 23 years with the Willard Storage Battery Co. in several capacities, serving as sales manager for 12 years, prior to joining Philco in January, 1941.

The Philco Storage Battery Division is producing explosion-proof batteries for the Navy Department, batteries for water buffalo landing barges, and for essential telephone, industrial, railroad, public utility and mining installations, it was reported. Output in the first six months of 1944 was 34 per cent greater than in the same period a year ago. The fifth Army-Navy "E" award has just been made to this division.

V V

Minnesota Company Purchases South Dakota Exchanges

The Central West Telephone Co., Waverly, Minn., recently purchased the Volin, Flyger, Davis and Monroe, S. D., exchanges from the Midwest Telephone Co., Hurley, S. D.

The Central West company is controlled by L. J. Ollig of Waverly, Minn. This company owns and operates about 40 exchanges in South Dakota and Minnesota.

Standard of Dependability

"YANKEE" TOOLS

Standard the world over for more than half a century, "Yankee" Fine Mechanics' Tools—Spiral Screw Drivers, Tap Wrenches, Automatic Drills, Bit Braces—are saving vital man-hours on every conceivable sort of wartime production. They'll work at reconversion one of these days, and then again on production of the peacetime goods of private enterprise. They save man-hours by being deliberately and ingeniously designed to do precisely that. So remember "Yankee" Tools as time, trouble, and money savers when they are again readily available after Victory has been won. Order from your industrial supply distributor, or write North Bros. Mfg. Co., Dept. T-1044, Phila., Pa. Furnish priority ratings whenever possible, and every effort will be made to fill your orders.

"YANKEE" SPIRAL SCREW DRIVER NO. 130A
A Size for Every Purpose

"YANKEE" TOOLS
make good mechanics better
North Bros. Mfg. Co., Phila. 33, U. S. A.
Established 1880

ALL the strength and durability inherent in steel are combined---with definite economies---in *Crapo* Galvanized Steel Strand. Heavy, ductile, tightly-bonded zinc coatings, applied by the famous *Crapo* Galvanizing Process, provide lasting protection against corrosion.

Ask the distributor of *Crapo* Galvanized Products near you or write direct for further information!

INDIANA
STEEL & WIRE CO.
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CHANCE
STEEL ANCHORS
expand deep
into solid earth
The blades of Chance Steel Expanding Anchors cut deep and straight into solid earth with a minimum of soil disturbance. On the average, these anchors expand to 2½ times their original size and the pull in solid earth is well balanced because there is no side twisting during expansion. The nut retainer aids expansion and permits salvaging the rod or driving it down. Get the details.
A·B·CHANCE CO.
CENTRALIA, MISSOURI.

Kellogg Ball Teams Win Championships

The big citywide commercial-industrial soft ball tournament, conducted in the Chicago area by the Chicago *Herald-American* newspaper, recently was concluded with the Kellogg Switchboard & Supply Co. team winning the city championship.

Having won the season's play honors, the Kellogg team defeated the best of 162 teams, qualifying to play a three-game championship round with the Amertorp aggregation. The Kellogg team won the championship the hard way, winning two in a row, after the Amertorp group had won the opening game.

The winning of the citywide championship is the second honor won by the Kellogg team this year. In the Clearing Industrial League, the team fought its way to the championship round and finished in second place.

The accompanying photograph pictures the presentation of the *Herald-American* commercial-industrial championship trophy by H. Berz, secretary, Chicago Sports Association. H. Anderson, manager of the Kellogg soft ball team, is receiving the trophy in behalf of the team and the company.

Terminating a hard fought season, the Kellogg girls' soft ball team won the championship trophy of the women's division of the Clearing Industrial Girls Soft Ball League. In a full season's play, the Kellogg girls' team lost only one game.

V V

Plant Men on Leave

Two-thirds of the employes on leave of absence from the Illinois Bell Telephone Co. for military or naval service worked in the plant department.

Promoted to Lieutenant Colonel

HARVEY JAMES WILSON, post Signal officer, Wright Field, Ohio, who is on military leave from the Michigan Bell Telephone Co., Detroit, recently was promoted from the rank of major to that of lieutenant colonel, temporary. During World War I, he served with the Canadian Expeditionary Force from 1915 to 1919.

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ENGINEERING
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Anywhere In The World

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Building and Rebuilding
Telephone Plants

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Wiring Jobs, Installations,
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ASSOCIATED TELEPHONE
ENGINEERS, INC.
(New Name of National Construction & Engineering Company—Enlarged Personnel and Organization)
1031 West Van Buren Street
Chicago 7, Illinois

Sterling Announces Medium Duty Industrial Diesel

Builders of industrial internal combustion engines for more than 40 years, the Sterling Engine Co., Buffalo, N. Y., has announced a new line of diesel engines ranging from 250 horsepower to 650 horsepower.

The Sterling company has been doing research and experimental work on diesels for more than 15 years. During a similar period, Hans Bohuslav, vice president in charge of engineering, has designed and produced many sizes and types of diesel engines, many of which are now in service on the fighting fronts of the world. The new Sterling Viking diesel embodies the latest and most modern features which have been produced out of the combined efforts of the Sterling engineers and the wide experience of Mr. Bohuslav, it is stated.

An important feature of its design, according to Addison F. Vars, president of the company, is the fact that it provides a power plant with the same overall dimensions and same weight as gasoline engines of equivalent horsepower. This feature is particularly notable because it means interchangeability with Sterling's Viking gasoline engine, it is reported.

The quantity of fuel consumed is considerably less, it is stressed. According to the Sterling president, it uses two-thirds, or less fuel, than a gasoline engine of corresponding size. Also, the fuel it utilizes costs far less than the price of gasoline.

According to ratings that the manufacturer sets, Sterling's line of diesels becomes, in effect, heavy duty power units for industrial use.

The new line of diesel Vikings, forerunners of other lines of diesels being planned, is composed of four models, a six-cylinder supercharged and unsupercharged, and an eight-cylinder supercharged and unsupercharged.

Horsepower ratings for the group are:

(1) Six-cylinder, unsupercharged, 250 HP. at 900 revolutions per minute to 325 HP. at 1,200 RPM.

(2) Six-cylinder, supercharged, 370 HP. at 900 revolutions per minute to 500 HP. at 1,200 RPM.

(3) Eight-cylinder, unsupercharged, 330 HP. at 900 revolutions per minute to 450 HP. at 1,200 RPM.

(4) Eight-cylinder, supercharged, 500 HP at 900 revolutions per minute to 650 HP. at 1,200 RPM.

The weight of the eight-cylinder stationary type model is 8,500 lbs. The weight of supercharged models is approximately 500 lbs. more.

Weights of the six-cylinder models are 7,000 lbs. for the stationary; su-

HANG THE LOAD ON HUBBARD HARDWARE
Distributed by 172 Leading Electrical Jobbers located throughout the U. S.
"There is One Near You!"
HUBBARD
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PITTSBURGH OAKLAND CALIFORNIA CHICAGO
MANUFACTURERS OF A COMPLETE LINE OF HARDWARE FOR TELEPHONE REQUIREMENTS SINCE 1900

IMPROVE PARTY LINES

ELIMINATE NOISE
with the
Improved RTC-2 VINCENT
RARE GAS RELAY
for harmonic or coded bells

Dual purpose device which economically improves both ringing and transmission on party lines.

NO MOVING PARTS.
Fully Guaranteed.
Can be installed in a minute

Write for Catalog 39-A describing
Non-Grounding Rare Gas Arresters
Terminal Strips • Potheads • Housings

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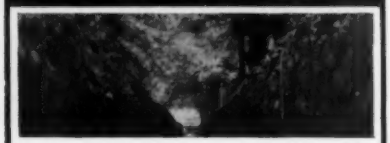
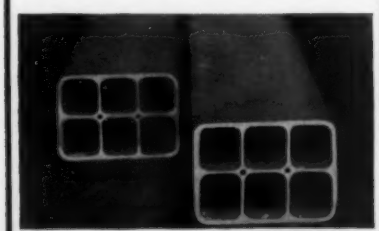
55-63 Dickerson St. Newark, N. J.
Signal Circuit Engineers Since 1906

SINCE 1889
NATCO
CLAY CONDUIT

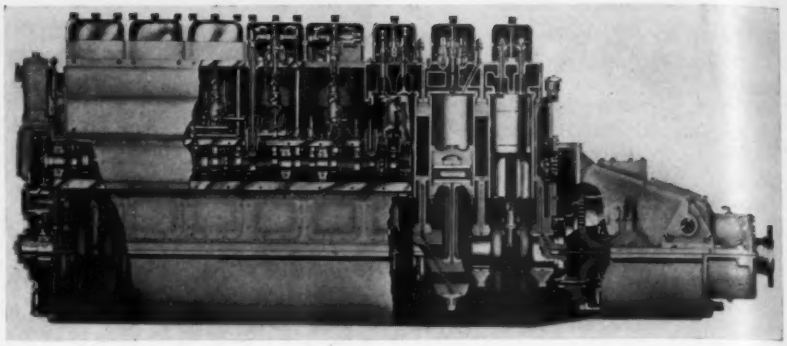


The proved and standard Protection for Underground Telephone Cables.

Cheapest in the long run. Highest quality and a full line of shapes.



National Fireproofing Corp.
202 E. Ohio Street, N. S.
PITTSBURGH, PA.



Cross section of the new Viking diesel engine, developed by the Sterling Engine Co., Buffalo, N. Y. The new engine has been designed for postwar production, and an important feature of the power plant is its ready interchangeability with the company's Viking gasoline engine.

percharged models weigh about 500 lbs. additional.

The Viking diesel is a conventional type engine insofar as moving parts are concerned. It is a four-cycle, multiple cylinder, inline, trunk piston type engine, completely enclosed. The cast cylinder block is of single piece construction, containing the crankshaft main bearings at the lower surface with the wet cylinder sleeves inserted in the upper portion of the block. For easier handling, the cylinder heads are arranged individually for each cylinder and are fastened to the top of the block.

The cylinder heads are provided with four valves per cylinder, two intake and two exhaust. They are actuated by push rods and rocker arms from the camshaft which is located in the cylinder block and which is driven by gears from the free end of the counter-balanced crankshaft.

The fuel injection system consists of individual injection pumps, one for each cylinder located close to each injection nozzle.

The bore and stroke for all models is 8 X 9 ins., giving a displacement of 2,714 cu. ins. for the six-cylinder model, and 3,619 cu. ins. for the eight-cylinder type.

The lubrication system, which is dry sump, has two oil pumps, one to draw the oil from the sump beneath the engine, and the other to supply forced feed lubrication to the bearings, including the wrist pin bearings.

Speed control is effected by means of a hydraulic governor, having close speed regulations to meet all requirements for the industrial and generator engine.

A battery charging generator and fuel oil supply pumps are provided, and other auxiliary pumps and accessories may be attached for special requirements.

Copperweld Reports Record-Breaking Production

Production and shipment of Copperweld wire reached the highest level in the history of the company during the month of August, William J. McIlvane, executive vice president, Copperweld Steel Co., announced recently.

Since practically all of the wire manufactured by Copperweld went to the U. S. Army Signal Corps for communication lines at the various battle fronts, production figures cannot be given, Mr. McIlvane pointed out.

ZOPHAR

WAXES
To Your Specifications

POTTING COMPOUNDS AND WAXES for wire, cable and junctions.

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WAXES AND COMPOUNDS for switchboards, coils, transformers, condensers and all types of electronic devices.

FUNGUS RESISTANT WAXES

ZOPHAR MILLS, Inc.
Established 1846
118—26th ST., BROOKLYN, N. Y.

Advertisers' Group Elects J. R. Kearney President

At their 22nd annual conference in Chicago, September 30, the largest advertising group in the world, the National Industrial Advertisers Association, elected to the presidency, James R. Kearney, Jr., president of the James R. Kearney Corp., St. Louis, Mo.

JAMES R. KEARNEY, JR.

The national advertisers association is made up of more than 2,600 advertising managers of leading industrial firms throughout the United States and Canada.

Following in the footsteps of his father, Mr. Kearney has attracted national recognition as a progressive, alert young business executive. His interest in advertising and sales promotion dates back to the day he received his master's degree from the University of Missouri School of Journalism in 1925.

He has taken an active part in the activities of the NIAA, having served the organization as a vice president in 1936. He was one of the founders of the St. Louis Industrial Marketing Council, having served as president in 1933.

V V

Pipeline Installation Revealed by AT&T

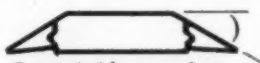
The American Telephone & Telegraph Co. on October 9 disclosed that it has recently installed the longest pipeline telephone system in the world along the Big Inch and the Little Big Inch systems.

The new system, which handles communications for both pipe lines on one private line telephone circuit, is already proving a valuable aid in securing a maximum flow of oil eastward, the company said in an article in the current issue of its publication, *Long Lines.*

FOR OVER-FLOOR TELEPHONE WIRING SYSTEMS

PANCAKE WIREMOLD

DESIGNED TO MEET TELEPHONE COMPANY NEEDS AND SPECIFICATIONS . .



Cover held securely to base. Low ramp angle.

Securely held twistouts for 1500 or 2600

Important features include . . . cover held positively to base . . . trip-proof cross section with minimum ramp angle . . . sturdy fittings with twistouts held securely in three places . . . raceway furnished in 10 ft. lengths . . . raceway base provided with screw knockouts located on 8½" centers.

Write for Telephone Installation data sheets and descriptive bulletins direct to The Wiremold Co., Hartford 10, Conn.

WIREMOLD IT!

FOR SPEED — SAFETY — SERVICE

Signal Corps Locates Generator; Prevents Plant Stoppage

Teamwork on the part of the Army Signal Corps and industry quickly solved a problem resulting from the recent Atlantic Coast hurricane.

The violent winds wrecked power cables and cut off the power supply of the Henry L. Crowley & Co. plant in West Orange, N. J., where steatite and "powdered iron" are made for use in electronic equipment. A group of special firing kilns was endangered, for these must be maintained at a constant temperature. If allowed to cool, the firebrick lining of the kilns would contract, causing damage which could be repaired only by several days' work. And, of course, the valuable charge in the kilns at the time of the stoppage would be completely lost.

In this emergency, on the morning after the hurricane, the plant manager called the Army Signal Corps for help. Lieut. Col. John S. Ball, acting director of the Production Division, Office of the Chief Signal Officer, Washington, D. C., received the call and acted promptly. In a military depot in central New Jersey, he located an auxiliary generator driven by a gas engine. He secured authorization for the loan both of this auxiliary generator and of a capable engineer to assist in installing it. Within an hour of receipt of the call, a truck was on its way to relieve the distressed plant. Within another five hours, the machine was installed in proper working order and the kilns relighted. Damage was averted and the equipment needed by our communication soldiers was again in full flow to the world's battle fronts.

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